

Realm Grinder Update 4.3.0

All changes and additions

March 26th, 2025

Editor's notes:
Major changes may be listed multiple times in different sections if they are relevant or important to the context of the section.
Changes & effects listed may have their tooltips' slightly reworded compared to ingame's for better clarity and readability, their functionalities are unchanged.
Effects whose formula is wrapped with (%) are always multiplicative, it is not indicative of the unit of the effect's returning stat. Likewise, effects whose formula is wrapped with +() are always additive.
Time constants and variables in formula are always in seconds unless specified otherwise.

Ps: Set page setup (File -> Page setup) to Pageless mode for best viewing experience.

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New Contents

Ascension 3's Lineage Perk 6

- **Note:** Refer to [Lineage Perks unlock table](#) for Reincarnation & Level requirements.
- **Fairy Perk 6**
 - **Effect:** Increase the duration of all Faction spells based on Mana Regeneration.
 - **Formula:** $(1.25 * \ln(1 + x) ^ 1.25)\%$, where x is Mana Regeneration.
- **Elven Perk 6**
 - **Effect:** Increase the production of Unique Buildings based on the highest amount of clicks made in this Reincarnation.
 - **Formula:** $(1.6 * x ^ 0.4)\%$, where x is the highest amount of clicks made this Reincarnation.
- **Angel Perk 6**
 - **Effect:** Multiplicatively increase autoclick power based on active spells.

- Formula: $(1.5 * x^{0.75})\%$, where x is active spells.
- Goblin Perk 6**
 - Effect: Increase Research Budget based on Tax Collection worth. Capped at +3,000 Budget.
 - Formula: $+(4 * x^{0.5})$, where x is Tax Collection worth.
- Undead Perk 6**
 - Effect: Increase Offline production based on assistants owned.
 - Formula: $(2 * \ln(1 + x)^2)\%$, where x is assistants owned.
- Demon Perk 6**
 - Effect: Multiplicatively increases Maximum Mana based on Trophies unlocked.
 - Formula: $(0.7 * x^{0.7})\%$, where x is the amount of Trophies unlocked.
- Titan Perk 6**
 - Effect: Increase Offline gains clicks based on Artifacts found.
 - Formula: $(0.1 * x^{1.1})\%$, where x is Artifacts found.
- Druid Perk 6**
 - Effect: Increase Tax Collection worth based on mana produced in this Era.
 - Formula: $(\ln(1 + x)^{1.5})\%$, where x is mana produced in this Era.
- Faceless Perk 6**
 - Effect: Increase the production of Unique Buildings based on time spent in your last Era.
 - Formula: $(0.7 * x^{0.7})\%$, where x is the time spent in your last Era.
- Dwarven Perk 6**
 - Effect: Increase Research Budget based on Excavation depth. Capped at +3,000 Budget.
 - Formula: $+(0.6 * x^{0.6})$, where x is Excavation depth.
- Drow Perk 6**
 - Effect: Multiplicatively increase production bonus from Gems based on Royal Exchanges purchased.
 - Formula: $(0.4 * x^{0.8})\%$, where x is Royal Exchanges purchased.
- Dragon Perk 6**
 - Effect: Multiplicatively increase assistants based on Dragon's Breath duration.
 - Formula: $(0.3 * x^{0.6})\%$, where x is Dragon's Breath duration.
- Archon Perk 6**
 - Effect: Increase triggered Tax collections based on Research Points.
 - Formula: $+(0.1 * \ln(1 + x)^{1.5})$, where x is Research Points.
- Djinn Perk 6**
 - Effect: Catalyst doubles the [Spell Tier](#)'s bonus effect of its activated spells.
- Makers Perk 6**
 - Effect: Increase the Ascension multiplier for Royal Market bonus by 0.7.
 - Note: Refer to [Royal Exchange](#) for more details.

Ascension 4’s Astral Factions

Quest Artifact

- Name:** Mask of Scorch’Rah
 - Hint: The time has come...
 - Description: An otherworldly, ever-burning mask that continuously shifts burn marks over its surface.
 - Requirements: R255+, 50,000+ Excavations, 4+ Legacies bought (F11750 will count.)
 - Chance: $(x / 1,000,000)\%$, where x is time spent in this Era in seconds.
 - Effect: Unlocks access to Astral factions in Ascension 4.

Astral Factions

- Note:** “Elite Factions” have been renamed to “Astral Factions”.
- Note:** There are no Legacies for Astral Factions.
- Treaties Faction Coins Cost**

Name	Scientific	Standard
Trade Treaty	1e51	1 Sxd
Friendship Pact	1e57	1 Ocd
Alliance	1e63	1 Vg
Union	1e69	1 Dvg

- Faction Upgrades Coins Cost**

XX1	XX2	XX3	XX4	XX5	XX6	XX7	XX8	XX9	XX10	XX11	XX12
1e186	1e189	1e192	1e198	1e201	1e204	1e213	1e216	1e219	1e231	1e234	1e237

Reincarnation Power

Reincarnation Power Rework

- **Reincarnation Powers are now separated by Ascensions**
 - All Reincarnation Powers now only start counting Reincarnations from the start of the respective Ascension they are unlocked in for their bonus.
 - For example: Reincarnation 50 power is based on (R-39), Reincarnation 120 power is based on (R-99), where R is Reincarnations made.
 - Reincarnations count more effects, such as D1375, apply after this conversion. For example: Reincarnation 50 power with D1375 purchased counts $((R-39) * 1.5)$ Reincarnations.
 - Effects of existing Reincarnation Powers have been adjusted to match.
 - The Reincarnation Power upgrade is now an upgrade series, with one upgrade for each Ascension.
 - You must buy these upgrades in order.
 - They still suffer from standard Ascension penalty normally.

New Reincarnation Powers

- **Note:** All 'R' variables in Reincarnation Powers' formula follow the new Ascension-based system.
- **Reincarnation 46 Power**
 - **Effect:** Increase the production of all buildings.
 - **Formula:** $(R * 10)\%$
- **Reincarnation 70 Power**
 - **Effect:** Autoclick additional times per second.
 - **Formula:** $+(R ^ 0.5)$
- **Reincarnation 220 Power**
 - **Effect:** Multiplicatively increase Mana Regeneration and Faction Coin find chance.
 - **Formula:** $(500 * R ^ 0.5)\%$

Other

- **Double Bottom** (New Secret Trophy)
 - **Requirement:** Reset excavations once.
 - **Effect:** Increase offline production by 100%.
 - **Cost:** 1e27 (Ascension 1), A2+ Free
- **Ascension 3 Mercenary Research Budget**
 - Affiliating with Mercenary gives **500 extra Research Budget**.
 - Mercenary Fourth Contract gives **1000 extra Research Budget**.
 - Mercenary Magic, Sorcery and Union Contracts now increase Research Budget.
 - **Merc Spell Formula:** $+(1000 + 5 * x ^ 0.5)$, where x is the activity time of the chosen spell.
 - **Note:** Capped at +5,000 Budget.
 - **Note:** Split equally between Facilities of the faction's research affiliations if it has more than one.
 - **Example:** God's Hand activity time increases Divine Budget by $(y = 1000 + 5 * x ^ 0.5)$ when God's Hand is picked; Grand Balance activity time increases Craftsmanship and Warfare Budget by $(0.5 * y)$ each; Dragon's Breath increases Research Budget for all Facilities by $(1/6 * y)$.
 - **Union Contract Formula:** $+(400 * x)$, where x is the amount of mercenary upgrades picked of the faction of that Union.
 - **Note:** Split equally between facilities of the faction's research affiliations if it has more than one.
- **New Unlock Requirements for Ascension 3 and Ascension 4 Researches**
- **Removed usability restrictions from upgrades that (possibly partly) are dependent on certain prerequisites (Example: AN8)**

System Changes

Gameplay

Logarithms cleaning

- **All logarithms are now always of base e, the natural log - ln().**
 - All existing instances of logarithms of other bases will be implicitly converted to the natural log, resulting in slightly stronger effects.
 - $(\log_{10}(1 + x))$ is now $(0.5 * \ln(1 + x))$ (15.13% stronger)
 - $(\log_2(1 + x))$ is now $(1.5 * \ln(1 + x))$ (3.97% stronger)

Stats consolidation

- **New stats:** Autoclick Power and triggered Tax Collections.
 - Upgrades that "autoclick x times per second" now increase the Autoclick Power stat additively.
 - Effects that give a flat amount of clicks upon activation are unchanged.
 - Elven Luck is unchanged, still having a separate chance to trigger per autoclick source.

- Upgrades that “cast x additional Tax Collections every time you cast a spell” now increase the triggered Tax Collections stat additively.
 - Effects that give a flat amount of Tax Collections upon activation are unchanged.
- Their effects, behaviours and functionalities remain unchanged otherwise.
- Upgrades can now multiplicatively increase Autoclick Power and triggered Tax Collections (rounded down before clicking/triggering).
- Autoclick Power stat can be seen in the production tooltip (next to your coin amount), and triggered Tax Collections stat can be seen in Tax Collection’s tooltip.

Functionality / UI

Terminology standardization

- **New terms:**
 - **Astral Factions:** Refers to Archon, Djinn & Makers, replacing “Elite/MAD Factions”.
 - **(This) Era:** Refers to the segment between 2 abdications, replacing “(This) Abdication/Game/Run”.
 - **Excavation Depth:** Refers to your current Excavation amount (at the top of the tab).
 - **Excavation Made:** Now refers to how many times you have excavated across all Excavation Resets.
 - **Royal Market:** Refers to the container for Royal Exchanges.
- **Tooltips consistency streamlining:** Many wordings and terms have been streamlined to be consistent across tooltips. Examples include: assistants owned, active spells, Research Points, Tax Collection worth, and many more.
- **Additive & multiplicative effects streamlining:**
 - Effects that affect stats that can be increased both additively and multiplicatively have their tooltips streamlined to be additive by default.
 - Examples:
 - “Gain Assistants... +(x)”
 - “Multiplicatively increase Assistants... (y)%”
 - “Increase Maximum Mana... +(x)”
 - “Multiplicatively increase Maximum Mana...(y)%”

New UI elements

- **Added Buy All Buildings button.**
 - Unlocks at 1e9 (1 B) gems.
 - The button attempts to buy all building tiers to the Buy Quantity setting in ascending order (buys Farms first and Hall of Legends last).
 - It divides your current Coins by 11, then buys the building tier if it would cost less than that amount.
 - Example: If you currently have 11,000,000 Coins and the Buy Quantity setting is Buy 100, it will attempt to buy 100 Farms if they cost less than 1,000,000 Coins, then buy 100 Inns, then buy 100 Blacksmiths, and so on.
 - If Buy Smart is selected, the setting is applied separately for each building tier.
 - Example: It may buy 100 Farms but only 10 Hall of Legends.
- **Added Autocasting preset modes buttons.**
 - Unlocks at Efficient autocasting.
 - Include 3 buttons for 3 modes: Bronze, Silver and Gold preset.
 - Bronze and Silver modes will set Tax Collections to Gold autocast and all other spells to Bronze (or Silver) autocast in ascending priority order (Call to Arms at priority 1).
 - Gold mode will set all spells to Gold autocast in ascending priority order, with Call to Arms at priority 1 and Tax Collection at lowest priority.
 - If Bronze mode is activated while all spells are already on Bronze autocast, it will set all spells off autocast instead. The same applies for Silver and Gold autocast and their respective modes.
- **Added Disable Toast Messages setting.**
 - If enabled, Buy All alert, Artifact discovered, Ruby found, Trophy unlocked and Challenge completed popup messages at the bottom of the screen will no longer be shown.

Other

- Clicking the Lineage Container will now buy all lineage levels you can afford at once.
- Offline Mana Regeneration and Active Spells stats are now visible in the Mana Bar.
- Offline production and effects that target Offline production in Ascension 0 are now correctly treated as Ascension 0 upgrades for Ascension penalty.
 - Previously, Offline production only suffer from Ascension penalty starting from Ascension 2.
- Spells duration and effects that are based on spell duration now update every 5 seconds.
 - Previously, a spell’s duration only updates upon casting the spell.
- Reincarnation and Ascension tooltips have been thinned out.
- Research Facilities now show unused budget in Ascension 3+.
- Research Unlocks now always show their progress in the tooltip.
- The Buy All Upgrades button now unlocks at 1e9 (1 B) gems.
- The Buy Quantity setting is now a separate menu instead of cycling through its settings.

Balance Changes

General progression & Ascension

Progression

- **Abdication**
 - Coins to Gems conversion rates are now constant across all Ascensions
 - **Conversion Formula:** $C = 1e12 * G * (G + 1)$, where C is Coins gained this Reincarnation, G is Gems owned + Gems in abdication treasury.
- **Reincarnation**
 - Reincarnation Gems requirements are now constant across all Ascensions. As a result, you may find your next Reincarnation requirements differ from what you are used to.
 - **Ascension 0 Gems Requirement Formula:** $1e27 * 100^R$
 - **Ascension 1 and up Gems Requirement Formula:** $1e27 * 100^R (R - 40 - (60 * (A - 1)))$

Ascension penalty

- **The following upgrades no longer suffer from Ascension penalty:**
 - Challenges
 - Bloodlines
 - Lineages & Lineage Perks
 - Artifact Sets
 - Equality, Uniformity, Beard Carpet, Lucky Neutral, Perfectly Good and Diabolical Evil Trophies.
- **The following upgrades are now separate from standard Ascension penalty (detailed in their respective sections):**
 - [Royal Exchanges](#)
 - [Spells & Spell Tiers](#)

Ascensions

- **Ascension 2:**
 - Union Additional Effects unlock moved from R111 to R105.
 - Prestige Factions:
 - Factions reintroduction moved from R116 to R110.
 - Unique Building 2 unlocks moved from R116 to R112.
 - Unions and Union upgrades unlock moved from R116 to R115.
- **Ascension 3:**
 - Prestige and Astral Factions are now unavailable at the beginning of Ascension 3.
 - The following upgrades are now removed starting from Ascension 3:
 - Building upgrade series
 - Researches at 400 Research Points and below
 - Prestige factions are reintroduced at R165.
 - Astral Factions are reintroduced at R172.
- **Ascension 4**
 - Tax Collection mana cost increased from 200 to 1000 mana.
 - The following upgrades are now removed starting from Ascension 4:
 - Assistants upgrade series
 - Alignment upgrade series
 - Wall fragment series
 - Gem potency series
 - Sun Force
 - Leet, Unitary, Building Hater, Lucky Neutral, Perfectly Good, Diabolical Evil, Rewind, Speed Run, Equality, glho kohhl snod, Suggestion Master, Triple Weirdness, Scarab of Fortune, Fossilized Rodent, Voodoo Doll & Fortune Teller Machine
 - Lineages and Artifact Sets are now unavailable at the beginning of Ascension 4.
 - Lineages become available at R230.
 - Artifact Sets become available at R225.
 - Set 2nd effect artifacts unlock moved from R230 to R225.
 - Research Point Faction Coin cost changed:
 - **Formula at 7,000-10,000 RP:** $(RP + 1)^{6.5}$, where RP is Research Points.
 - **Formula at 10,000+ RP:** $1e-30 * 1.033^{(0.33 * RP)}$, where RP is Research Points.
 - Old Research Budget: +3,000 per treaties (trade treaty, friendship pact, alliance & union).
 - New Research Budget: +5,000 for trade treaty, +5000 for union.

Reincarnation Power

- **Note:** Refer to [New Reincarnation Power](#) for an overview of the new Reincarnation Power system and new Reincarnation Powers.
- **Note:** Unless specified otherwise, Reincarnation Powers that moved place have their effects unchanged.
- **Note:** All 'R' variables in Reincarnation Powers' formula follow the new Ascension-based system.

- **Reincarnation 41 Power** removed.
- **Reincarnation 45 Power** moved down to Reincarnation 43.
- **Reincarnation 50 Power**
 - **Effect:** Multiplicatively increase Faction Coin find chance.
 - **Old Formula:** $(2.5 * R^{1.1})\%$
 - **New Formula:** $(1.5 * R^{0.95})\%$
- **Reincarnation 85 Power** moved down to Reincarnation 80.
- **Reincarnation 100 Power** moved up to Reincarnation 101
 - **Effect:** Multiplicatively increase Mana Regeneration.
 - **Old Formula:** $(1 * R)\%$
 - **New Formula:** $(2 * R)\%$
- **Reincarnation 108 Power** moved down to Reincarnation 107
 - **Effect:** Increase the production of Unique Buildings based on the difference of time spent as their respective faction against your most used faction in this Reincarnation.
 - **Formula:** $(0.15 * (x - y)^{0.75})\%$, where x is time spent as your most used Faction and y is time spent as the Faction(s) the Unique Building(s) belong to this Reincarnation.
 - **Note:** If Goblin Perk 1 is purchased, this power will also affect Non-Unique Buildings with a different formula using alignments instead.
 - **Formula:** $(80 + 0.8 * (x - y)^{0.8})\%$, where x is time spent as your most used alignment and y is time spent as the alignment matching the building of the Non-Unique Buildings this Reincarnation.
- **Reincarnation 120 Power**
 - **Effect:** Increase the production of all buildings.
 - **Old Formula:** $(150 * R)\%$
 - **New Formula:** $(10 * R)\%$
- **Reincarnation 170 Power**
 - **Old Effect:** Increase Research Budget by +3,000.
 - **New Effect:** Increase Research Budget.
 - **Formula:** $+(150 * A + 3.5 * R)$, where A is current Ascension.
- **Reincarnation 190 Power** moved up to Reincarnation 200
- **Reincarnation 210 Power** removed
- **Reincarnation 230 Power** removed

Faction Upgrades

Fairy

- **FR1** (Pixie Dust Fertilizer)
 - **Old Effect:** Increase the base production of Farms by +98 and reduce its cost multiplier by (-0.02).
 - **New Effect:** Increase the base production of Farms, Inns, and Blacksmiths by +600 and reduce their building cost multipliers by (-0.02).
- **FR2** (Fairy Workers)
 - **Old Effect:** Increase the production of Farms, Inns and Blacksmiths by 10,000%.
 - **New Effect:** Increase the production of Farms, Inns and Blacksmiths based on assistants owned.
 - **Formula:** $(5 * \ln(1 + x)^{2.5})\%$, where x is assistants owned.
- **FR3 <- FR6 <- FR9 effects swapped (FR3 moved to FR9 and vice versa)**
- **FR3** (Spellsmith)
 - **Old Effect:** Increase Mana Regeneration based on Blacksmiths built.
 - **New Effect:** Increase Mana Regeneration based on Farms, Inns, and Blacksmiths built.
 - **Formula:** $+(0.3 * x^{0.3})$, where x is Farms, Inns, and Blacksmiths built.
- **FR4 and FR7 swapped**
- **FR4** (Fairy Cuisine)
 - **Old Effect:** Increase the base production of Blacksmiths by +580 and reduce its cost multiplier by (-0.02).
 - **New Effect:** Autoclick based on active spells.
 - **Formula:** $+(x)$, where x is active spells.
- **FR5** (Golden Pots)
 - **Old Effect:** 20% of the production of Farms, Inns and Blacksmiths is added to base clicking reward.
 - **New Effect:** 100% of the production of Farms, Inns and Blacksmiths is added to base clicking reward. Also increase Faction Coin find chance by +20%.
- **FR6** (Swarm of Fairies)
 - **Effect:** Gain assistants based on Farms, Inns, and Blacksmiths built.
 - **Old Formula:** $+(1.2 * x^{0.6})$, where x is Farms, Inns, and Blacksmiths built.
 - **New Formula:** $+(0.3 * x^{0.7})$, where x is Farms, Inns, and Blacksmiths built.
- **FR7** (Fairy Cuisine)
 - **Old Effect:** Increase the base production of Inns by +234 and reduce its cost multiplier by (-0.02).
 - **New Effect:** Increase production bonus from Gems based on Fairy Chanting activity time in this Era.
 - **Formula:** $(0.35 * x^{0.65})\%$, where x is Fairy Chanting activity time this Era.
- **FR8** (Rainbow Link)
 - **Effect:** Increase production of all buildings based on Farms, Inns, and Blacksmiths built.

- **Old Formula:** $(0.75 * x^{0.75})\%$, where x is Farms, Inns and Blacksmiths built.
 - **New Formula:** $(1.25 * x^{0.75})\%$, where x is Farms, Inns and Blacksmiths built.
- **FR9** (Kind Hearts)
 - **Effect:** Increase Maximum Mana based on Good Buildings built.
- **FR10** (Bubble Swarm)
 - **Effect:** Increase maximum mana based on the highest amount of Swarming Towers built in this Reincarnation.
 - **Old Formula:** $+(x^{1.05})$, where x is the highest amount of Swarming Towers built this Reincarnation.
 - **New Formula:** $+(2.5 * x^{1.5})$, where x is the highest amount of Swarming Towers built this Reincarnation.
- **FR11** (Pheromones)
 - **Old Effect:** Gain assistants based on time spent as Chaos this Reincarnation.
 - **New Effect:** Multiplicatively increase assistants based on time spent as Chaos this Reincarnation.
 - **Formula.** $(0.6 * x^{0.6})\%$, where x is time spent as Chaos this Reincarnation.
- **FR12** (Dream Catchers)
 - **Effect:** Multiplicatively increase Mana Regeneration based on Chaos spells cast this Reincarnation.
 - **Old Formula:** $(1.2 * x^{0.8})\%$, where x is Chaos spells cast this Reincarnation.
 - **New Formula:** $(0.01 * \ln(1 + x)^6)\%$, where x is Chaos spells cast this Reincarnation.

Elven

- **Note:** Effects that increase Elven Luck chance for autoclicks also increase its chance for manual clicks by +1%.
- **EL1** (Elven Mint)
 - **Old Effect:** Multiplicatively increase Faction Coin find chance by 150%.
 - **New Effect:** Multiplicatively increase Faction Coin find chance by 100%. Also autoclick 3 times per second.
- **EL2 and EL9 swapped**
- **EL2** (Syvan Treasure Frills)
 - **Effect:** 50% of your total building production is added to base clicking reward.
- **EL3** (Ancient Clicking Arts)
 - **Effect:** Increase Mana Regeneration based on clicks made in this Reincarnation.
 - **Old Formula:** $+(2 * \log_{10}(1 + x)^{1.25})$, where x is clicks made in this Reincarnation.
 - **New Formula:** $+(0.75 * \ln(1 + x)^{1.5})$, where x is clicks made in this Reincarnation.
- **EL4** (Elven Emissary)
 - **Old Effect:** Increase clicking reward based on Good buildings built, and assistants find 3 times as many Faction Coins.
 - **New Effect:** Increase clicking reward based on Good buildings built, and increase Offline gains of Faction Coins by 200%.
 - **Old Formula:** $(x^{0.6})\%$, where x is Good Buildings built.
 - **New Formula:** $(1.4 * x^{0.6})\%$, where x is Good Buildings built.
- **EL5** (Elven Efficiency)
 - **Effect:** Increase Royal Exchange bonus based on Faction Coins found this Era.
 - **Old Formula:** $+(2 * \ln(1 + x)^2)\%$, where x is Faction Coins found this Era.
 - **New Formula:** $+(1.75 * \ln(1 + x)^{1.75})\%$, where x is Faction Coins found this Era.
- **EL6** (Secret Clicking Techniques)
 - **Effect:** Increases the production of all buildings based on clicks made in this Reincarnation..
 - **Old Formula:** $(2 * x^{0.4})\%$, where x is clicks made this Reincarnation.
 - **New Formula:** $(1.5 * x^{0.5})\%$, where x is clicks made this Reincarnation.
- **EL7** (Elven Diplomacy)
 - **Effect:** Clicks count more based on Faction Coins found this Era.
 - **Old Formula:** $(2 * \ln(1 + x)^2)\%$, where x is Faction Coins found this Era.
 - **New Formula:** $(1.5 * \ln(1 + x)^{1.15})\%$, where x is Faction Coins found this Era.
- **EL8** (Elven Luck)
 - **Old Effect:** Each time you click for money you have 1% chance to gain coins equal to 250000% of your production, also generating Faction Coins based on Reincarnation made.
 - **New Effect:** Each time you click you have 1% chance to gain coins equal to 150000% of your production, also generating Faction Coins based on Reincarnation made.
- **EL9** (Elven Treasure Casing)
 - **Old Effect:** Increase base clicking reward by +25,000 per Trophy unlocked, and increase chance to find Faction Coins based on the amount of Trophies you unlocked.
 - **New Effect:** Increase Faction Coin find chance based on trophies unlocked.
 - **Formula:** $+(10 + 2.5 * (x^{0.95}))$, where x is the amount of Trophies unlocked.
- **EL10** (Wooden Dice)
 - **Old Effect:** Increase Elven Luck chance to trigger and its effects based on the highest amount of Arboreal Cities you made this Reincarnation.
 - **New Effect:** Increase Elven Luck chance to trigger for autoclicks and increase its effects based on the highest amount of Arboreal Cities built this Reincarnation.
 - **Old Production Formula:** $(40 * x^{0.8})\%$, where x is highest amount of Arboreal Cities built this Reincarnation.
 - **New Production Formula:** $(80 * x^{0.8})\%$, where x is highest amount of Arboreal Cities built this Reincarnation.
- **EL12** (Elven Discipline)
 - **Effect:** Increase assistants additively and multiplicatively based on the amount of Faction Coins found in this Era.

- **Old Additive Formula:** $+(50 * \ln(1 + x) ^ 1.5)$, where x is Faction Coins found this Era.
- **New Additive Formula:** $+(150 * \ln(1 + x) ^ 1.5)$, where x is Faction Coins found this Era.
- **Old Multiplicative Formula:** $(1.5 * \log_{10}(1 + x) ^ 1.5)\%$, where x is Faction Coins found this Era.
- **New Multiplicative Formula:** $(1.5 * \ln(1 + x) ^ 1.5)\%$, where x is Faction Coins found this Era

Angel

- **AN1** (Holy Bells)
 - **Effect:** Increase Mana Regeneration based on buildings built.
 - **Old Formula:** $+(1.6 * x ^ 0.4)$, where x is buildings built.
 - **New Formula:** $+(x ^ 0.5)$, where x is buildings built.
- **AN2** (Angelic Determination)
 - **Effect:** Increase the production of all buildings based on spells cast this Era.
 - **Old Formula:** $(4 * \ln(1 + x) ^ 2)\%$, where x is spells cast this Era.
 - **New Formula:** $(2 * \ln(1 + x) ^ 3)\%$, where x is spells cast this Era.
 - **Removed Effect:** No longer multiplies Angel Coins found.
- **AN3** (Angel Feathers)
 - **Effect:** Increase Faction Coin find chance based on active spells
 - **Old Formula:** $+(10 * x)$, where x is active spells.
 - **New Formula:** $+(4 + 4 * x)$, where x is active spells.
- **AN4** (Guardian Angels)
 - **Old Effect:** Spell casts count 100% more.
 - **New Effect:** Increase the base production of Cathedrals/Dark Temples/Monasteries (Based on Alignment) by +98000 and increase their production based on their quantity.
 - **Formula:** $(40 + 40 * x ^ 0.4)\%$, where x is Cathedrals/Dark Temples/Monasteries built.
- **AN5** (Angelic Wisdom)
 - **Old Effect:** Decrease the cost of all spells by 50%.
 - **New Effect:** Increase spell durations and multiplicatively increase Mana Regeneration by 50%.
- **AN6** (Archangel Feathers)
 - **Old Effect:** Multiplicatively increase Mana Regeneration by 50%.
 - **New Effect:** Increases the production of all buildings based on Mana Regeneration.
 - **Formula:** $(1.5 * \ln(1 + x) ^ 3)\%$, where x is your Mana Regeneration.
- **AN7** (Magical Gates)
 - **Effect:** Increase Maximum Mana based on time spent as Good in this Reincarnation.
 - **Old Formula:** $+(3.5 * x ^ 0.7)$, where x is time spent as Good this Reincarnation.
 - **New Formula:** $+(15 + x ^ 0.7)$, where x is time spent as Good this Reincarnation.
- **AN8** (Angelic Domination)
 - **Old Effect:** Spell durations are increased by 50%.
 - **New Effect:** Increase production bonus from Gems based on God's Hand activity time in this Era. Also reduce the cost of all spells by 50%.
 - **Formula:** $+(0.3 * x ^ 0.7)\%$, where x is the activity time of God's Hand in this Era.
- **AN9** (Wings of Liberty)
 - **Old Effect:** Increase the production of all buildings based on Mana Regeneration.
 - **New Effect:** Increase the production of all buildings based on the duration of your longest spell.
 - **Formula:** $(6 * x ^ 0.6)\%$, where x is your Mana Regeneration.
- **AN10** (Heaven's Brilliance)
 - **Old Effect:** Increase the bonus multiplier for all spells at tier 7 and above based on the highest amount of Holy Sites you own in this Reincarnation. Gem Grinder and all Dragon's Breath effects are increased based on the highest amount of Holy Sites you own in this Reincarnation.
 - **New Effect:** Multiplicatively increase Maximum Mana based on the highest amount of Holy Sites built in this Reincarnation.
 - **Formula:** $(1.5 * x ^ 0.5)\%$, where x is the highest amount of Holy Sites built in this Reincarnation.

Goblin

- **GB1** (Strong Currency)
 - **Effect:** Gain assistants based on Faction Coins found this Era.
 - **Old Formula:** $+(0.5 * \ln(1 + x) ^ 2)$, where x is Faction Coins found this Era.
 - **New Formula:** $+(1.25 * \ln(1 + x) ^ 1.5)$, where x is Faction Coins found this Era.
- **GB2** (Slave Trading)
 - **Effect:** Increase the production of all buildings based on Evil buildings built.
 - **Old Formula:** $(2 * x ^ 0.7)\%$, where x is Evil buildings built.
 - **New Formula:** $(3 * x ^ 0.7)\%$, where x is Evil buildings built.
- **GB3** (Cheap Materials)
 - **Effect:** Tax Collection is worth more seconds based on buildings built.
 - **Old Formula:** $+(x ^ 0.5)$, where x is buildings built.
 - **New Formula:** $+(1.5 * x ^ 0.5)$, where x is buildings built.
- **GB4 and GB8 swapped**
- **GB4** (Fool's Gold)

- **Effect:** Increase Faction Coin find chance based on the highest amount of Witch Conclaves built in this Reincarnation.
- **GB5** (Goblin Economists)
 - **Effect:** Multiplicatively increase Mana Regeneration based on your current amount of Coins.
 - **Old Formula:** $(0.75 * \log_{10}(1 + x) ^ 1.25)\%$, where x is your current amount of Coins.
 - **New Formula:** $(15 + 0.5 * \ln(1 + x) ^ 1.25)\%$, where x is your current amount of Coins.
- **GB6** (Hobgoblin Gladiators)
 - **Effect:** Increase the production of all buildings based on Tax Collection worth.
 - **Old Formula:** $(12 * \ln(1 + x) ^ 3)\%$, where x is Tax Collection worth.
 - **New Formula:** $(4 * \ln(1 + x) ^ 2)\%$, where x is Tax Collection worth.
- **GB7** (Goblin Central Bank)
 - **Old Effect:** Each time you cast a spell, cast an additional Tax Collection for free.
 - **New Effect:** Each time you cast a spell, cast free Tax Collections based on your Maximum Mana.
 - **Formula:** $+(1 + 1.5 * \ln(1 + 0.001 * x) ^ 1.5)$, where x is Maximum Mana.
- **GB8** (Black Market)
 - **Old Effect:** Multiplicatively increase production bonus from Gems by 150%.
 - **New Effect:** Multiplicatively increase production bonus from Gems based on Gems owned.
 - **Formula:** $(100 + 2 * \ln(1 + x))\%$, where x is Gems owned.
 - **Effect:** Also increase Offline production based on Tax Collection casts this Era.
 - **Old Formula:** $(\log_{10}(1 + x) ^ 2)\%$, where x is Tax Collection casts this Era.
 - **New Formula:** $(\ln(1 + x) ^ 2)\%$, where x is Tax Collection casts this Era.
- **GB9** (Green Fingers Discount)
 - **Old Effect:** Gain Coins randomly every 10 minutes. Also works while offline.
 - **New Effect:** Gain Coins randomly every 120 seconds. Value increases over time spent in this Reincarnation. Also works and is empowered while offline.
 - **Old Formula:** $(\text{randRange}(1, 2500) * x)$, where x is your total (buildings + assistants) coin production per second, including spells.
 - **New Formula:** $((\text{randRange}(1, 1500) * x) * (1 + 0.01 * y ^ 0.8))$, where x is your total (buildings + assistants) coin production per second, including spells, and y is time spent this Reincarnation.
 - **Offline:** The timer does not go down while offline. Instead, the game rolls a single offline roll worth **randRange(2000, 10000)** the next time the game goes online.
 - **Note:** If this offline roll is 8000 or higher, it will complete Goblin Challenge 1.
- **GB10** (Fool's Gems)
 - **Effect:** Multiplicatively increase production bonus from Gems based on the highest amount of Slave Markets built in this Reincarnation.
 - **Old Formula:** $(0.5 * x ^ 0.5)\%$, where x is the highest amount of Slave Markets built in this Reincarnation.
 - **New Formula:** $(0.3 * x ^ 0.7)\%$, where x is the highest amount of Slave Markets built in this Reincarnation.
- **GB11** (Money Is Magic)
 - **Effect:** Multiplicatively increase Mana Regeneration based on Tax Collection casts this Era.
 - **Old Formula:** $(2 * \ln(1 + x) ^ 2)\%$, where x is Tax Collection casts this Era.
 - **New Formula:** $(1.8 * \ln(1 + x) ^ 1.8)\%$, where x is Tax Collection casts this Era.

Undead

- **UD1** (The Walking Dead)
 - **Effect:** Increase Faction Coin find chance based on assistants owned.
 - **Old Formula:** $+(\ln(1 + x) ^ 1.75)\%$, where x is assistants owned.
 - **New Formula:** $+(5 + 2.5 * \ln(1 + x) ^ 1.75)\%$, where x is assistants owned.
- **UD2** (Deadened Muscles)
 - **Effect:** Increase the production of all buildings based on the highest amount of Necropolises built this Reincarnation.
 - **Old Formula:** $(4 * x ^ 0.8)\%$, where x is the highest amount of Necropolises built this Reincarnation.
 - **New Formula:** $(40 + 4 * x ^ 0.8)\%$, where x is the highest amount of Necropolises built this Reincarnation.
- **UD3** (Death Temples)
 - **Effect:** Increase Mana Regeneration based on the highest amount of Necropolises built this Reincarnation.
 - **Old Formula:** $+(x ^ 0.3)$, where x is the highest amount of Necropolises built this Reincarnation.
 - **New Formula:** $+(6 + 1.5 * x ^ 0.5)$, where x is the highest amount of Necropolises built this Reincarnation.
- **UD4 and UD9 swapped.**
- **UD4** (Undead Resilience)
 - **Old Effect:** Increases offline production based on Mana Regeneration.
 - **New Effect:** Increase Night Time Duration based on Undead Coins found this Era.
 - **Formula:** $(5 + 1.5 * \ln(1 + x) ^ 1.5)\%$, where x is Undead Faction Coins found this Era.
- **UD5** (Corse Supply)
 - **Old Effect:** Gain assistants based on time spent being offline in this Reincarnation.
 - **New Effect:** Gain assistants based on time spent this Era.
 - **Formula:** $+(5 + 0.5 * x ^ 0.7)\%$, where x is time spent this Era.
- **UD6** (Plagued Buildings)
 - **Old Effect:** Increase the production of all buildings based on time spent this Era.
 - **New Effect:** Increase the production of all buildings based on the activity time of your most used spell in this Era.
 - **Formula:** $(25 + 2.5 * x ^ 0.75)\%$, where x is your most used spell's activity time this Era.

- **New Additional Effect:** Offline time this Era is added to Night Time activity time this Era.
- **UD7** (Dead Fields)
 - **Old Effect:** Buildings count 75% more.
 - **New Effect:** Buildings and spell activity times count 75% more.
- **UD8** (Tireless Workers)
 - **Old Effect:** Increase the production of assistants by 1500%.
 - **New Effect:** Increase the production of assistants based on your Mana Regeneration.
 - **Formula:** $(85 * (1.5 * \ln(1 + x)) ^ 1.15)\%$, where x is your mana regeneration.
- **UD9** (Unholy Rituals)
 - **Effect:** Increase offline production based on time spent being offline this Reincarnation.
 - **Old Formula:** $(0.4 * x ^ 0.8)\%$, where x is your offline time this Reincarnation.
 - **New Formula:** $(50 + 9.5 * x ^ 0.95)\%$, where x is your offline time this Reincarnation.
 - **New Effect:** Increase the production of all buildings based on time spent being offline in this Era.
 - **Formula:** $(50 + 7.5 * x ^ 0.75)\%$, where x is your offline time this Era.
- **UD10** (Flesh Servants)
 - **Effect:** Multiplicatively increase assistants based on the highest amount of Flesh Workshops built this Reincarnation.
 - **Old Formula:** $(1.3 * x ^ 0.7)\%$, where x is the highest amount of Flesh Workshops built this Reincarnation.
 - **New Formula:** $(0.7 * x ^ 0.7)\%$, where x is the highest amount of Flesh Workshops built this Reincarnation.
- **UD11** (Eternal Servitude)
 - **Effect:** Increase Unique buildings production based on time spent in this Era.
 - **Old Formula:** $(x ^ 0.7)\%$, where x is time spent in this Era.
 - **New Formula:** $(0.7 * x ^ 0.7)\%$, where x is time spent in this Era.
- **UD12** (Zombie Apocalypse)
 - **Old Effect:** Gain assistants based on time spent offline in this Reincarnation
 - **New Effect:** Increase Offline Production based on the duration of your longest spell.
 - **Formula:** $(7 * x ^ 0.7)$, where x is the duration of your longest spell.

Demon

- **DM1** (Torture Chambers)
 - **Effect:** Increase the production of Royal Castles / Evil Fortresses / Iron Strongholds (based on your Alignment) based on assistants owned.
 - **Old Formula:** $(6 * \ln(1 + x) ^ 3)\%$, where x is assistants owned.
 - **New Formula:** $(7 * \ln(1 + x) ^ 3.5)\%$, where x is assistants owned.
- **DM2 and DM7 swapped**
- **DM2** (Infernal Magic)
 - **Effect:** Increase Mana Regeneration based on Hell Portals built.
 - **Old Formula:** $+(3.5 * x ^ 0.35)$, where x is Hell Portals built.
 - **New Formula:** $+(3 + 1.5 * x ^ 0.5)$, where x is Hell Portals built.
- **DM3 and DM8 swapped**
- **DM3** (Burning Legion)
 - **Old Effect:** Gain assistants based on Hell Portals built.
 - **New Effect:** Gain assistants based on the highest amount of Hell Portals built in this Reincarnation.
 - **Formula:** $+(6 + 1.5 * x ^ 0.65)$, where x is the highest amount of Hell Portals built in this Reincarnation.
- **DM4** (Lava Pits)
 - **Old Effect:** Increase the base production of Evil Fortresses by +200,000 and Hell Portals by +2,000,000. Your playtime in this Era counts more by 6 additional hours.
 - **New Effect:** Increase the base production of Evil Fortresses by +900,000 and Hell Portals by +8,800,000.
- **DM5** (Demon Overseers)
 - **Effect:** Increase the production of the three highest building tiers based on Trophies unlocked.
 - **Old Formula:** $(2 * x ^ 0.8)\%$, where x is Trophies unlocked.
 - **New Formula:** $(16 + 2 * x ^ 0.8)\%$, where x is Trophies unlocked.
- **DM6** (Demonic Presence)
 - **Old Effect:** Increase Maximum Mana based on Evil spells cast in this Era.
 - **New Effect:** Increase Maximum Mana based on Evil spells cast in this Reincarnation.
 - **Formula:** $+(40 + 4 * \ln(1 + x) ^ 4)$, where x is Evil spells cast this Reincarnation.
- **DM7** (Devil Tyrant)
 - **Old Effect:** The three highest building tiers count more based on time spent as Evil in this Reincarnation.
 - **New Effect:** Increase the production of the three highest building tiers based on time spent as evil in this Reincarnation. The three highest building tiers also count more by 100%.
 - **Formula:** $(1.5 * x ^ 0.5)\%$, where x is time spent as Evil this Reincarnation.
- **DM8** (Evil Conquerors)
 - **Effect:** Increase the production of all buildings based on the highest amount of Hell Portals built this Reincarnation.
- **DM9** (Very Bad Guys)
 - **Old Effect:** Increase the production of Heaven's Gate / Hell Portals / Ancient Pyramid (based on your Alignment) based on the highest amount of Hell Portals built in this Reincarnation.
 - **New Effect:** Increase the production of Heaven's Gate / Hell Portals / Ancient Pyramid (based on your Alignment) based on Hellfire Blast activity time in this Reincarnation.

- **Formula:** $(35 + 0.7 * x^{0.7})\%$, where x is Hellfire Blast activity time this Reincarnation.
- **DM10** (Abyssal Furnace)
 - **Effect:** Increase the production of all buildings based on the highest amount of Burning Abysses built this Reincarnation. Higher tiers get better bonuses.
 - **Old Formula:** $(0.5 * T^{1.5} * x^{0.5})\%$, where x is the highest amount of Burning Abysses built in this Reincarnation..
 - **New Formula:** $(0.35 * T^2 * x^{0.7})\%$, where x is the highest amount of Burning Abysses built in this Reincarnation.
- **DM11** (Demonic Fury)
 - **Effect:** Multiplicatively increase Faction Coin find chance based on the least time spent between Evil and Chaos this Reincarnation.
 - **Old Formula:** $(0.25 * \min(x, y)^{0.75})\%$, where x is evil time and y is chaos time spent this Reincarnation.
 - **New Formula:** $(25 + 0.25 * \min(x, y)^{0.75})\%$, where x is evil time and y is chaos time spent this Reincarnation.

Titans

- **TT1** (Colossal Forge)
 - **Effect:** Increase the production of all buildings based on buildings built.
 - **Old Formula:** $(6 * x^{0.6})\%$, where x is buildings built.
 - **New Formula:** $(6.25 * x^{0.625})\%$, where x is buildings built.
- **TT2** (Charged Clicks)
 - **Old Effect:** Multiplicatively increase Mana Regeneration based on clicks made in this Era.
 - **New Effect:** Increase Mana Regeneration additively and multiplicatively based on clicks made in this Era.
 - **Additive Formula:** $(5 + 0.5 * \ln(1 + x)^{1.5} + x^{0.15})\%$, where x is clicks made this Era.
 - **Multiplicative Formula:** $(0.5 * \ln(1 + x)^{2.5} + 0.5 * x^{0.25})\%$, where x is clicks made this Era.
- **TT3** (Titan Obelisk)
 - **Effect:** Increase Faction Coin find chance additively based on time spent as Neutral in this Reincarnation.
 - **Old Formula:** $+(3 * x^{0.7})\%$, where x is time spent as Neutral this Reincarnation.
 - **New Formula:** $+(6 + 6 * x^{0.6})\%$, where x is time spent as Neutral this Reincarnation.
- **TT4** (Titan Drill)
 - **Old Effect:** Increase the base production of Warrior Barracks / Slave Pens / Deep Mines by +9,635, and Cathedrals / Dark Temples / Monasteries by +98,000 (based on your Alignment). Also increase the production of those building tiers by 1000%.
 - **New Effect:** Increase the base production of Warrior Barracks / Slave Pens / Deep Mines by +19,635 and Cathedrals / Dark Temples / Monasteries by +98,000 (based on your Alignment). Also increase the production of those building tiers by 2500%.
- **TT5** (Charged Structures)
 - **Old Effect:** Increase the production of all buildings based on active spells.
 - **New Effect:** Increase the production of all buildings based on Lightning Strike activity time in this Era.
 - **Formula:** $(70 + 70 * x^{0.3})\%$, where x is Lightning Strike activity time this Era.
- **TT7** (Cyclopean Strength)
 - **Old Effect:** Assistants count 200% more, and increase their production by 200%.
 - **New Effect:** Assistants count 200% more. Increase their production based on time spent as Titans in this Reincarnation.
 - **Formula:** $(30 + 1.3 * x^{0.7})\%$, where x is time spent as Titans this Reincarnation.
- **TT9** (Oversized Legends)
 - **Effect:** Reduce Hall of Legends building cost multiplier and increase assistants production based on Hall of Legends built.
 - **Old Formula:** $(6 * x^{0.6})\%$, where x is Hall of Legends built.
 - **New Formula:** $(3 * x^{0.9})\%$, where x is Hall of Legends built.
- **TT11** (Titanic Authority)
 - **Effect:** Increase the production of Unique Buildings based on Royal Exchanges purchased.
 - **Old Formula:** $(x^{0.6})\%$, where x is Royal Exchanges purchased.
 - **New Formula:** $(0.6 * x^{0.6})\%$, where x is Royal Exchanges purchased.
- **TT12** (Colossus Kingdom)
 - **Old Effect:** Gain assistants based on time spent as Order in this Reincarnation.
 - **New Effect:** Multiplicatively increase assistants based on time spent as Order in this Reincarnation.
 - **Formula:** $(0.6 * x^{0.6})\%$, where x time spent as Order this Reincarnation.

Druid

- **DD1** (Druidic Vocabulary)
 - **Effect:** Increase the production of all buildings based on their tier, giving the best bonus to the lowest.
 - **Old Formula:** $(4,000 * (12 - T))\%$.
 - **New Formula:** $(1,000 * (12 - T))\%$.
- **DD3** (Natural Recycling)
 - **Effect:** Increase Faction Coin find chance additively and multiplicatively based on buildings built.
 - **Old Additive & Multiplicative Formula:** $(0.4 * x^{0.4})$, where x is buildings built.
 - **New Additive Formula:** $+(6 * x^{0.6})\%$, where x is buildings built.
 - **New Multiplicative Formula:** $(0.5 * x^{0.5})\%$, where x is buildings built.
- **DD5** (Bardic Knowledge)

- **Effect:** Increase the production of all buildings based on Maximum Mana.
 - **Old Formula:** $(16 * \ln(1 + x) ^ 2)\%$, where x is Maximum mana.
 - **New Formula:** $(15 * \ln(1 + x) ^ 2.5)\%$, where x is Maximum mana.
- **DD6** (Shapeshifting)
 - **Effect:** Increase mana regeneration based on assistants owned.
 - **Old Formula:** $+(1.3 * x ^ 0.7)$, where x is assistants owned.
 - **New Formula:** $+(3 * x ^ 0.4)$, where x is the assistants owned.
- **DD7** (Mabinogion)
 - **Old Effect:** Increase the production of Non-Unique Buildings based on their tier, giving the best bonus to the lowest.
 - **New Effect:** Increase the production of all buildings based on their tier, giving the best bonus to the lowest.
 - **Formula:** $(16 * 2 ^ (12 - T))\%$.
- **DD8** (Earthly Soul)
 - **Effect:** Increase mana regeneration based on the highest amount of Stone Pillars built in this Reincarnation.
 - **Old Formula:** $+(x ^ 0.25)$, where x is the highest amount of Stone Pillars built this Reincarnation.
 - **New Formula:** $+(1.35 * x ^ 0.35)$, where x is the highest amount of Stone Pillars built this Reincarnation.
- **DD9** (Building Jungle)
 - **Effect:** Increase the production of each building based on their quantity.
 - **Old Formula:** $(1.5 * x ^ 0.9)\%$, where x is the building tier's quantity.
 - **New Formula:** $(3 * x ^ 0.9)\%$, where x is the building tier's quantity.
- **DD10** (Building Vines)
 - **Effect:** Increase spell duration based on the highest amount of Ziggurats built in this Reincarnation.
 - **Old Formula:** $(0.5 * x ^ 0.5)\%$, where x is the highest amount of Ziggurats built this Reincarnation.
 - **New Formula:** $(x ^ 0.5)\%$, where x is the highest amount of Ziggurats built this Reincarnation.

Faceless

- **FC1** (Territorial Expanse)
 - **Effect:** Increase the production of Citadels / Necropolises / Labyrinths (based on your Alignment) based on assistants owned.
 - **Old Formula:** $(50 * \ln(1 + x) ^ 2.5)\%$, where x is assistants owned.
 - **New Formula:** $(50 * \ln(1 + x) ^ 3)\%$, where x is assistants owned.
- **FC2** (Evolutive Mutation)
 - **Effect:** Increase Faction Coin find chance based on the highest amount of Labyrinths built in this Reincarnation.
 - **Old Formula:** $+(3 * x ^ 0.6)\%$, where x is the highest amount of Labyrinths built this Reincarnation.
 - **New Formula:** $+(12 + 3 * x ^ 0.6)\%$, where x is the highest amount of Labyrinths built this Reincarnation.
- **FC3** (Deep Memory)
 - **Effect:** Multiplicatively increase assistants based on the time spent in your longest Era in this Reincarnation.
 - **Old Formula:** $(0.3 * x ^ 0.7)\%$, where x is time spent in longest Era this Reincarnation.
 - **New Formula:** $(0.6 * x ^ 0.6)\%$, where x is time spent in longest Era this Reincarnation.
- **FC4** (Gold Synthesis)
 - **Effect:** Increase the production of Neutral buildings based on your current amount of Coins.
 - **Old Formula:** $(0.2 * \ln(1 + x) ^ 2)\%$, where x is your current Coins.
 - **New Formula:** $(0.5 * \ln(1 + x) ^ 1.7)\%$, where x is your current Coins.
- **FC5** (Mitosis)
 - **Effect:** Gain assistants based on buildings built.
 - **Old Formula:** $+(0.5 * x ^ 0.5)$, where x is buildings built.
 - **New Formula:** $+(x ^ 0.5)$, where x is buildings built.
- **FC6** (Overgrowth)
 - **Effect:** Increases the production of all buildings based on the highest amount of buildings built in this Reincarnation.
 - **Old Formula:** $(0.8 * x ^ 0.8)\%$, where x is the highest amount of buildings built this Reincarnation.
 - **New Formula:** $(2 * x ^ 0.75)\%$, where x is the highest amount of buildings built this Reincarnation.
- **FC7** (Magical Treasures)
 - **Effect:** Increase Mana Regeneration based on assistants owned.
 - **Old Formula:** $+(2.5 * x ^ 0.5)$, where x is assistants owned.
 - **New Formula:** $+(3 * x ^ 0.4)$, where x is assistants owned.
- **FC8** (Abominations)
 - **Effect:** Increase the production of assistants based on active spells.
 - **Old Formula:** $(20 * x ^ 0.9)\%$, where x is active spells.
 - **New Formula:** $(20 * x ^ 0.8)\%$, where x is active spells.
- **FC10** (Primal Knowledge)
 - **Effect:** Multiplicatively increase Faction Coin find chance based on the highest amount of Forbidden Libraries built in this Reincarnation. Grows over time and resets every 15 minutes.
 - **Old Formula:** $((t \% 900) / 75 * x ^ 0.4)\%$, where t is time spent this Era, x is the highest amount of Forbidden Libraries built this Reincarnation.
 - **New Formula:** $((t \% 900) / 60 * x ^ 0.6)\%$, where t is time spent this Era, x is the highest amount of Forbidden Libraries built this Reincarnation.
- **FC11** (Forbidden Language)
 - **Old Effect:** Increase spell durations based on Reincarnations made.

- **New Effect:** Increase the production of all buildings based on Brainwave duration. Also multiplicatively increase Brainwave headstart by 100%.
 - **Formula:** $(0.7 * x^{0.7})\%$, where x is Brainwave duration.
- **FC12** (Dimension Door)
 - **Effect:** Increase the production of all buildings based on the highest amount of Maximum Mana you had in this Reincarnation.
 - **Old Formula:** $(2 * \ln(1 + x)^2)\%$, where x is highest Maximum Mana this Reincarnation.
 - **New Formula:** $(2.25 * \ln(1 + x)^{2.25})\%$, where x is highest Maximum Mana this Reincarnation.

Dwarven

- **DN3** (Mining Prodigies)
 - **Old Effect:** Increase the production of all buildings based on Excavations made in this Reincarnation.
 - **New Effect:** Increase the production of all buildings based on Excavation depth.
 - **Formula:** $(25 * x^{0.5})\%$, where x is Excavation depth
- **DN7** (Battlehammers)
 - **Effect:** Increase the production of all buildings based on Dwarven Coins found in this Era.
 - **Old Formula:** $(2 * \ln(1 + x)^2)\%$, where x is Dwarven Coins found this Era.
 - **New Formula:** $(2.5 * \ln(1 + x)^{2.5})\%$, where x is Dwarven Coins found this Era.
- **DN10** (Solidity)
 - **Effect:** Multiplicatively increase production bonus from Gems based on the highest amount of High Bastions built in this Reincarnation.
 - **Old Formula:** $(0.5 * x^{0.5})$, where x is the highest amount of High Bastions built in this Reincarnation.
 - **New Formula:** $(1.2 * x^{0.8})$, where x is the highest amount of High Bastions built in this Reincarnation.
- **DN11** (Stonetalking)
 - **Effect:** Increase the production of all buildings based on the highest between Maximum Mana and Mana Regeneration.
 - **Old Formula:** $(2 * \ln(1 + \max(x, y))^2)\%$, where x is Maximum Mana and y is Mana Regeneration.
 - **New Formula:** $(3 * \ln(1 + \max(x, y))^3)\%$, where x is Maximum Mana and y is Mana Regeneration.
- **DN12** (Refined Minerals)
 - **Effect:** Multiplicatively increase Mana Regeneration and Maximum Mana based on the highest time spent as Order, Balance or Chaos.
 - **Old Formula:** $(0.03 * x^{0.7})\%$, where x is the highest time spent as Order, Balance or Chaos.
 - **New Formula:** $(2.5 * x^{0.5})\%$, where x is the highest time spent as Order, Balance or Chaos.

Drow

- **DW1** (Underworld Tyranny)
 - **Effect:** Increase the production of all buildings based on time spent as Evil in this Reincarnation.
 - **Old Formula:** $(0.7 * x^{0.7})$, where x is time spent as Evil this Reincarnation.
 - **New Formula:** $(1.3 * x^{0.7})$, where x is time spent as Evil this Reincarnation.
- **DW2** (Honor Among Killers)
 - **Effect:** Increase Faction Coin find chance based on assistants owned.
 - **Old Formula:** $+(100 + 0.5 * x^{0.5})\%$, where x is assistants owned.
 - **New Formula:** $+(100 + 10 * x^{0.5})\%$, where x is assistants owned.
- **DW3** (Shadow Advance)
 - **Effect:** Increase the production of all buildings based on Maximum Mana.
 - **Old Formula:** $(2 * \log_{10}(1 + x)^2)\%$, where x is Maximum Mana.
 - **New Formula:** $(7.5 * \ln(1 + x)^{2.5})\%$, where x is Maximum Mana.
- **DW4** (Mana Addicts)
 - **Old Formula:** $+(2.5 + 0.25 * x^{0.5})$, where x is time spent in this Era.
 - **New Formula:** $+(3 + 0.3 * x^{0.7})$, where x is time spent in this Era.
- **DW5** (Blood Sacrifices)
 - **Effect:** Increase the production of all buildings based on the highest amount of Dark Temples built in this Reincarnation.
 - **Old Formula:** $(3 * x)\%$, where x is the highest amount of Dark Temples built this Reincarnation.
 - **New Formula:** $(1.5 * x^{0.95})\%$, where x is the highest amount of Dark Temples built this Reincarnation.
- **DW8** (Professional Assassins)
 - **Effect:** Multiplicatively increase production bonus from Gems based on Royal Exchanges made.
 - **Old Formula:** $(0.6 * x^{0.6})\%$, where x is Royal Exchanges made.
 - **New Formula:** $(5 * x^{0.5})\%$, where x is Royal Exchanges made.
- **DW9** (Blade Dance)
 - **Effect:** Increase the production of all buildings based on Combo Strike counter.
 - **Old Formula:** $(100 + 80 * x^{0.4})\%$, where x is Combo Strike counter.
 - **New Formula:** $(60 + 60 * x^{0.6})\%$, where x is Combo Strike counter.
- **DW10** (Spider Clerics)
 - **Effect:** Increase Royal Exchange bonus based on the highest amount of Brothels built in this Reincarnation.
 - **Old Formula:** $+(1.75 * x^{0.75})\%$, where x is the highest amount of Brothels built this Reincarnation.
 - **New Formula:** $+(4 * x^{0.8})\%$, where x is the highest amount of Brothels built this Reincarnation.

- **DW12** (Crystal Servants)
 - **Effect:** Multiplicatively increase assistants based on Gems owned.
 - **Old Formula:** $(1.75 * \log_{10}(1 + x) ^ 1.75)\%$, where x is your current amount of gems.
 - **New Formula:** $(2 * \ln(1 + x) ^ 1.5)\%$, where x is your current amount of gems.

Dragon

- **DG1** (Dragonscales)
 - **Effect:** Increase the production of all buildings based on time spent as Neutral in this Reincarnation. Effect is increased on Stone Pillars, Labyrinths and Hall Of Legends.
 - **Old Formula:** $((x / 60) ^ 0.5)\%$, where x is time spent as Neutral this Reincarnation. This is multiplied by 10 on Stone Pillars, Labyrinths and Hall of Legends.
 - **New Formula:** $(0.3 * x ^ 0.7)\%$, where x is time spent as Neutral this Reincarnation. $(7.5 * x ^ 0.75)\%$ on Stone Pillars, Labyrinths and Hall of Legends.
- **DG2** (Iron Flight)
 - **Effect:** Increase the production of Iron Stronghold by 200% per spell affecting it.
 - **New Additional Effect:** Also reduces Dragon's Breath tier cost scaling.
 - **Formula:** (-0.3) .
 - **Note:** Refer to [Spell Tiers](#) for more details.
- **DG3** (Imposing Presence)
 - **Effect:** Increase Mana Regeneration based on Neutral buildings built.
 - **Old Formula:** $+(0.5 * x ^ 0.5)$, where x is the Neutral buildings built.
 - **New Formula:** $+(0.7 * x ^ 0.7)$, where x is the Neutral buildings built.
 - **New Additional Effect:** Increase assistants multiplicatively by 75% while White Breath is active.
- **DG4** (Dragonborn)
 - **Effect:** Increase assistants additively and multiplicatively, and their production, based on all time spent as Dragons.
 - **Old Additive Formula:** $+(50 * x ^ 0.5)$, where x is time spent as Dragons (All Time).
 - **New Additive Formula:** $+(5 * x ^ 0.5)$, where x is time spent as Dragons (All Time).
- **DG6** (Sharp Claws)
 - **Effect:** Multiplicatively increase Royal Exchange bonus and Faction Coin find chance based on clicks made in this Era.
 - **Old Formula:** $(0.8 * x ^ 0.35)\%$, where x is clicks made this Era.
 - **New Faction Coin Formula:** $(0.8 * x ^ 0.4)\%$, where x is clicks made this Era.
 - **New Royal Exchange Formula:** $(x ^ 0.5)\%$, where x is clicks made this Era.
- **DG7** (Ancient Hunger)
 - **Effect:** Increase Maximum Mana additively and multiplicatively based on Faction Coins found in this Era
 - **Old Additive Formula:** $+(20 * \ln(1 + x) ^ 2)$, where x is Faction Coins found this Era.
 - **New Additive Formula:** $+(15 * \ln(1 + x) ^ 2.5)$, where x is Faction Coins found this Era.
 - **Old Multiplicative Formula:** $(0.75 * \ln(1 + x) ^ 1.25)\%$, where x is Faction Coins found this Era.
 - **New Multiplicative Formula:** $(0.5 * \ln(1 + x) ^ 1.5)\%$, where x is Faction Coins found this Era.
- **DG8** (Eternal Wisdom)
 - **Effect:** Increase the production of all buildings based on Royal Exchange bonus.
 - **Old Formula:** $(1.5 * x ^ 0.95)\%$, where x is Royal Exchange bonus.
 - **New Formula:** $(1.5 * x ^ 0.75)\%$, where x is Royal Exchange bonus.
- **DG9** (Chromatic Scales)
 - **Effect:** Increase production of all buildings based on the amount of active Dragon's Breath effects
 - **Old Formula:** $(100 * (x ^ 2))\%$, where x is active Dragon's Breath effects.
 - **New Formula:** $(250 * (x ^ 2))\%$, where x is active Dragon's Breath effects.
 - **New Additional Effect:** Increase offline production by 100%
- **DG10** (Fang Food)
 - **Effect:** Multiplicatively increase Mana Regeneration and assistants based on the highest amount of Dragon Pastures built in this Reincarnation.
 - **Old Formula:** $(0.5 * x ^ 0.5)\%$, where x is the highest amount of Dragon Pastures built this Reincarnation.
 - **New Formula:** $(0.6 * x ^ 0.6)\%$, where x is the highest amount of Dragon Pastures built this Reincarnation.
- **DG11** (Wyrms Rest)
 - **Old Effect:** Remove 1 Ascension penalty from Royal Exchange bonus.
 - **New Effect:** Increase the Ascension multiplier for Royal Market bonus by 0.7.
 - **Note:** Refer to [Royal Exchange](#) for more details.
- **DG12** (Draconic Supremacy)
 - **Effect:** Increase the production of all buildings based on Maximum Mana.
 - **Old Formula:** $(20 * \ln(1 + x) ^ 2)\%$, where x is your Maximum Mana.
 - **New Formula:** $(10 * \ln(1 + x) ^ 2)\%$, where x is Maximum Mana.

Mercenary

- **Holy Crusaders** (Good Mercenary)
 - **Old Effect:** Gain assistants based on spells cast in this Era. Also increase clicking reward by 100% per active spell.
 - **New Effect:** Increase assistants additively and multiplicatively based on spells cast in this Era.
 - **Additive Formula:** $(2 * x ^ 0.5)$, where x is spells cast this Era.

- **Multiplicative Formula:** $(2 * \ln(1 + x) ^ 1.2)$, where x is spells cast this Era.
- **Heresiarchs** (Evil Mercenary)
 - **Old Effect:** Increase the production of Evil buildings based on your most built Evil building.
 - **New Effect:** Multiplicatively increase Mana Regeneration based on the combined activity time of Evil spells in this Reincarnation.
 - **Formula:** $(30 + 0.7 * x ^ 0.7)\%$, where x is the activity time of Evil Spells this Reincarnation.
- **Trade Lords** (Neutral Mercenary)
 - **Old Effect:** When assistants find a Faction Coin, they also find a Faction Coin for every other faction. Also increases Mana Regeneration based on Faction Coins found in this Era.
 - **New Effect:** Increase Mana Regeneration and Faction Coin find chance based on time spent offline in this Reincarnation.
 - **Formula:** $+(2.5 * x ^ 0.75)$, where x is time spent offline in this Reincarnation.

Archon

- **AR2** (Energy Recharge)
 - **Old Effect:** Maximum Mana counts more based on time spent as Order in this Reincarnation. Also increase Precognition base, scaling, and changes its starting duration to 5 minutes.
 - **New Effect:** Multiplicatively increase Maximum Mana based on time spent as Order in this Reincarnation. Also increase Precognition base, scaling, and changes its starting duration to 1 minutes. (Maximum Mana Formula unchanged)
- **AR5** (Archon Pride)
 - **Effect:** Multiplicatively increase assistants based on your current Lineage level.
 - **New Additional Effect:** Also increase mana produced while offline based on your current Lineage level..
 - **Formula:** $(1.15 * x ^ 1.15)\%$, where x is current Lineage level
- **AR6** (Absent-mindedness)
 - **Old Effect:** Increase Offline bonus based on Excavation Resets made in this Reincarnation.
 - **New Effect:** Increase Offline bonus based on Excavation depth and Excavation Resets made in this Reincarnation.
 - **Formula:** $(30 + 0.75 * x ^ 0.75 + 4 * (y + 1) ^ 4)\%$, where x is Excavation depth and y is Excavation Resets made this Reincarnation.
- **AR11** (Absolute Hierarchy)
 - **Old Effect:** Remove 1 Ascension Penalty from Call to Arms.
 - **New Effect:** All faction spells gain 1 tier.

Djinn

- **DJ5** (Spiritual Bindings)
 - **Old Effect:** Multiplicatively increase assistants based on time spent offline in this Era.
 - **New Effect:** Multiplicatively increase assistants based on time spent offline in this Reincarnation.
 - **Formula:** $(0.4 * x ^ 0.6)\%$, where x is time spent offline this Reincarnation.
 - **New Additional Effect:** Spells cast and spell activity times count more based on time spent in this Reincarnation
 - **Formula:** $(0.2 * x ^ 0.6)\%$, where x is time spent offline this Reincarnation.
- **DJ6** (Wild Surge)
 - **Old Effect:** Increase the production of all buildings based on the duration of your longest spell..
 - **New Effect:** Multiplicatively increase production bonus from Gems based on the duration of your longest spell.
 - **Formula:** $(0.5 * x ^ 0.5)\%$, where x is the duration of your longest spell.
- **DJ7** (Wishing Well)
 - **Old Effect:** Multiplicatively increase production bonus from Gems based on assistants owned.
 - **New Effect:** Increase the production of all buildings based on assistants owned.
 - **Formula:** $(1.5 * \ln(1 + x) ^ 1.5)\%$, where x is assistants owned.
- **DJ9** (Mana Creatures)
 - **Effect:** Multiplicatively increase assistants based on the highest mana produced in this Reincarnation.
 - **Old Formula:** $(1.8 * \log_{10}(1 + x) ^ 1.8)\%$, where x is the highest mana produced in a single game this Reincarnation.
 - **New Formula:** $(1.8 * (0.5 * \ln(1 + x)) ^ 1.8)\%$, where x is the highest mana produced in a single game this Reincarnation.
- **DJ11** (Blue Powder)
 - **Effect:** Multiplicatively increase Mana Regeneration based on Royal Exchanges made.
 - **Old Formula:** $(0.3 * x ^ 0.8)\%$, where x is Royal Exchanges made.
 - **New Formula:** $(0.4 * x ^ 0.8)\%$, where x is Royal Exchanges made.

Makers

- **MK3** (Infinite Improvements)
 - **Effect:** Increase the production of all buildings based on time spent as Balance.
 - **Old Formula:** $(0.3 * x ^ 0.7)\%$, where x is time spent as Balance this Reincarnation.
 - **New Formula:** $(0.7 * x ^ 0.7)\%$, where x is time spent as Balance this Reincarnation.
- **MK7** (Stonecarving)
 - **Old Effect:** Increase the production of all buildings based on Excavations Made and Excavation Resets made in this Reincarnation.
 - **New Effect:** Increase the production of all buildings based on Excavation depth.

- **Formula:** $(25 + 2.5 * x^{0.5})\%$, where x is Excavation depth.
- **MK10** (Valuable Antiquity)
 - **Old Effect:** Artifacts count more based on time spent in this Reincarnation.
 - **New Effect:** Multiplicatively increase Triggered Tax Collections based on artifacts found.
 - **Formula:** $(x^{0.7})\%$, where x is artifacts found.
- **MK11** (Bedrock Foundation)
 - **Effect:** Increase the base production of each building based on their tier.
 - **Old Formula:** $+(1000 * T)$
 - **New Formula:** $+(10^{(0.75 * T)})$
- **MK12** (Reality Marble)
 - **Old Effect:** Gain assistants based on clicks made in this Reincarnation.
 - **New Effect:** Multiplicatively increase assistants based on clicks made in this Reincarnation.
 - **Formula:** $(1.25 * \ln(1 + x)^{1.25})\%$, where x is clicks made this Reincarnation.
 - **New Additional Effect:** Artifacts count more based on clicks made in this Reincarnation
 - **Formula:** $(x^{0.25})\%$, where x is clicks made this Reincarnation.

Faction Unions

- **Fairy Union**
 - **Effect:** Increase the production of assistants based on Farms, Inns and Blacksmiths built if buildings (count) is even, or on all other buildings if odd.
 - **Old Formula:** $(6 * x^{0.6})\%$, where x is the corresponding buildings (FIB or T4-11) built.
 - **New Formula:** $(13 * x^{0.65})\%$, where x is the corresponding buildings built.
- **Undead Union**
 - **Effect:** Increase the production of Unique Buildings based on Offline production.
 - **Old Formula:** $(360 * \ln(1 + x)^{2.8})\%$, where x is Offline production.
 - **New Formula:** $(360 * \ln(1 + x)^3)\%$, where x is Offline production.
- **Demon Union**
 - **Old Effect:** Also Trophies count 100% more.
 - **New Effect:** Trophies count more based on time spent offline in this Reincarnation.
 - **Formula:** $(30 + 0.3 * x^{0.6})\%$, where x is offline time in this Reincarnation.
- **Druid Union**
 - **Effect:** Increase the production of Non-Unique Buildings based on total Lineage levels and the maximum amount of Grand Balance targets.
 - **Old Formula:** $(2.4 * x^{1.025} * y^{1.2})\%$, where x is total Lineage levels and y is buildings targeted by Grand Balance (maximum 11).
 - **New Formula:** $(x * y^{1.25})\%$, where x is total Lineage levels and y is buildings targeted by Grand Balance (maximum 11).
- **Faceless Union**
 - **Old Effect:** Gain assistants based on total time spent as a random faction, Updates every 3 minutes.
 - **New Effect:** Multiplicatively increase assistants based on total time spent as a random faction. Updates every 3 minutes.
 - **Formula:** $(40 + 0.4 * x^{0.4})$, where x is time spent all time with a given faction.
- **Chaos Dwarven Union**
 - **Effect:** Multiplicatively increase assistants chaotically based on spells cast this Reincarnation.
 - **Old Formula:** $((\text{sum}(\text{digit}(x)^y))^{0.9})\%$,
with $(y = \text{floor}(\log_{10}(1 + x) + 1) / 10 + 2)$,
where x is spells cast this Reincarnation.
 - **New Formula:** $((\text{sum}(\text{digit}(x)^y))^{0.8})\%$,
with $(y = \text{floor}(\ln(1 + x) + 1) / 10 + 2)$,
where x is spells cast this Reincarnation.
 - **Note:** $\text{sum}(\text{digit}(x)^y)$ is the sum of each digit of x raised to y.
 - **Example:** $\text{sum}(\text{digit}(123)^4) = (1^4 + 2^4 + 3^4)$
- **Chaos Drow Union**
 - **Effect:** Increase the production of a specific building tier, depending on the amount of buildings you own, based on time spent offline in this Reincarnation.
 - **Old Formula:** $(0.666 * x^{0.666})\%$, where x is time spent offline in this Reincarnation.
 - **New Formula:** $(100 + 3 * x^{0.87})\%$, where x is time spent offline in this Reincarnation.
- **Dragon Union**
 - **Order Union:**
 - **Effect:** Increase the production of all buildings based on time spent as Order this Reincarnation.
 - **Old Formula:** $(3 * x^{0.7})\%$, where x is time spent as Order this Reincarnation.
 - **New Formula:** $(0.7 * x^{0.7})\%$, where x is time spent as Order this Reincarnation.current Coins
 - **Chaos Union:**
 - **Effect:** Increase the production of Unique or Non-Unique Buildings based on assistants owned. Target buildings depend on $\text{floor}(\ln(1+x))$ where x is Faction Coin find chance (even for Unique, odd for Non-Unique).
 - **Old Formula:** $(0.9 * x^{0.35})\%$, where x is assistants owned for Unique buildings, and $(2.7 * x^{0.35})\%$, where x is assistants owned for Non-Unique Buildings.

- **New Formula:** $(2 * x^{0.3})\%$, where x is assistants owned for Unique buildings, and $(6 * x^{0.3})\%$, where x is assistants owned for Non-Unique Buildings.

Faction Costs

- **Treaties Faction Coin Costs**

Name	Old Cost	New Cost
Neutral Friendship Pact	2,500	1,000
Neutral Alliance	10,000	4,000
Neutral Heritage	25,000	15,000
Prestige Trade Treaty	3,000	2,500
Prestige Friendship Pact	12,000	10,000
Prestige Alliance	30,000	25,000
Dragon Friendship Pact	2.5e10	5e12
Dragon Alliance	6.5e10	5e15
Dragon Heritage	4e11	5e17
Ascension 3 Mercenary Fourth Contract	1e50	1e100
Ascension 4 Trade Treaties	1e15	1e12

- **Mercenary Upgrades Faction Coin Costs**

Name	Old Cost	New Cost
Magic Contract	1,000	5,000
Upgrade 1 (Bronze 1)	1,500	1,000
Upgrade 2 (Bronze 2)	3,000	5,000
Upgrade 3 (Bronze 3)	4,500	15,000
Upgrade 4 (Bronze 4)	6,000	32,000
Upgrade 5 (Silver 1)	3,000	8,000
Upgrade 6 (Silver 2)	6,000	45,000
Upgrade 7 (Silver 3)	10,500	124,000
Upgrade 8 (Silver 4)	13,500	256,000
Sorcery Contract	25,000	250,000
Upgrade 9 (Gold 1)	4,500	27,000
Upgrade 10 (Gold 2)	10,500	152,000
Upgrade 11 (Gold 3)	16,500	420,000
Upgrade 12 (Gold 4)	22,500	864,000

- **Ascension 2 Base Faction Upgrades Coin Costs**
 - **XX11:** Reduced from 1e80 to 1e75
 - **XX12:** Reduced from 1e95 to 1e90
- **Ascension 4 Prestige Faction Upgrades Coin Costs**
 - Base cost increased from 1e114 to 1e120

No.	XX1	XX2	XX3	XX4	XX5	XX6	XX7	XX8	XX9	XX10	XX11	XX12
Old	1e114	1e117	1e120	1e126	1e129	1e132	1e141	1e144	1e147	1e159	1e162	1e165
New	1e120	1e123	1e126	1e132	1e135	1e138	1e147	1e150	1e153	1e165	1e168	1e171

Faction Unlocks

Dragon Unlock

- **Spiky Rough Egg** (Quest Artifact)
 - **Old Requirement:** Reincarnation 46+.

- **New Requirement:** Reincarnation 42+.
- **Hatch!** (Dragon Stage 1)
 - **Old Requirement:** Spiky Rough Egg artifact, 12 hours since obtaining the artifact.
 - **New Requirement:** Spiky Rough Egg artifact, 2 hours since obtaining the artifact.
 - **New Additional Effect:** Unlocks Tiering for Common spells (Call to Arms & Spiritual Surge).
- **Drakeling** (Dragon Stage 2)
 - **Old Requirement:** Hatch!, 12 hours of Hellfire Blast activity time since purchasing the previous stage.
 - **New Requirement:** Hatch!, 2 hours of Hellfire Blast activity time since purchasing the previous stage, Reincarnation 44+.
 - **New Additional Effect:** Unlocks Tiering for Evil spells.
- **Dragon** (Dragon Stage 3)
 - **Old Requirement:** Drakeling, 12 hours since purchasing the previous stage, 3,750 Fairy Assistants.
 - **New Requirement:** Drakeling, 2 hours since purchasing the previous stage, 5,000 Fairy Assistants, Reincarnation 46+.
 - **New Additional Effect:** Unlocks Tiering for Good spells.
- **Elder Dragon** (Dragon Stage 4)
 - **Old Requirement:** Dragon, 12 hours since purchasing the previous stage, 50,000 Max Mana.
 - **New Requirement:** Dragon, 2 hours since purchasing the previous stage, 50,000 Max Mana, Reincarnation 48+.
 - **New Additional Effect:** Unlocks Tiering for Neutral spells.

Other

- **Cloaked Shady Figure's Quest** (Drow Unlock)
 - **Old Requirement:** 10,000 spells cast this Reincarnation.
 - **Requirement:** 7,500 spells cast this Reincarnation.
- **Mercenary Tribute** (Mercenary Unlock)
 - **Old Cost:** $(100,000 * ((1 + x) / 60)^{0.5})$ of each Faction Coins, where x is time spent this Era.
 - **New Cost:** $(50,000 * ((1 + x) / 60)^{0.5})$ of each Faction Coins, where x is time spent this Era.
- **Astral Quest** (Archon/Djinn/Makers Unlock)
 - **Old Requirement:** 24 hours of Temporal Flux/Maelstrom/All Creation activity time this Reincarnation.
 - **New Requirement:** 3 hours of Temporal Flux/Maelstrom/All Creation activity time this Reincarnation.
- **Mercenary Duel** (Ascension 3 Mercenary Reintroduction)
 - **Old Requirement:** $1e64$ (10 Vg) Faction Coins found, $1e7$ (10 M) clicks made, $1e17$ (100 Qa) highest assistants owned, $1e18$ (1 Qi) spells cast.
 - **New Requirement:** $1e50$ (100 Qid) Faction Coins found, $5e6$ (5 M) clicks made, $1e16$ (10 Qa) highest assistants owned, $1e20$ (100 Qi) Spells cast .

Royal Exchange

Royal Market

- The container for accessing Royal Exchanges in the upgrade tab has been renamed to “Royal Market” for clarification purposes.
- The overall bonus from all Individual Royal Exchanges is now also referred to as “Royal Market bonus”, and is used for Ascension penalty.

Individual Royal Exchange

- Individual Royal Exchanges inside Royal Market have been renamed to “Royal Exchanges”.
- Effects now only target or affect Royal Exchanges (and Royal Exchange bonus) and never the Royal Market bonus.

Ascension Penalty

- **Royal Market Ascension Penalty:** $B^{(0.7 * (0.1 + M)^{0.7} / (1 + 2.5 * \ln(A)))}$, where B is the base Royal Market bonus in multiplier form, M is the sum of Ascension multiplier for Royal Market bonus (such as E1225), and A is current Ascension.
- **Note:** Royal Exchange bonus does not suffer from Ascension penalty, only Royal Market bonus does.

Heritages

Heritages

- **Elven Heritage**
 - **New Additional Effect:** Also autoclicks once per second.
- **Undead Heritage**
 - **Old Effect:** Gain assistants based on the time spent in this Era.
 - **New Effect:** Increase Offline production based on time spent in this Era.
 - **Formula:** $+(0.7 * x^{0.7})$, where x is time spent this Era.
- **Drow Heritage**
 - **Effect:** Increase the production of assistants based on Royal Exchanges purchased.
 - **Old Formula:** $(2 * x^{0.8})\%$, where x is Royal Exchanges purchased.
 - **New Formula:** $(3 * x^{0.7})\%$, where x is Royal Exchanges purchased.
- **Dragon Heritage**

- **Effect:** Increase the production of assistants based on time spent as Dragon in this Reincarnation.
 - **Old Formula:** $(0.3 * x^{0.7})\%$, where x is time spent as Dragon this Reincarnation.
 - **New Formula:** $(0.7 * x^{0.85})\%$, where x is time spent as Dragon this Reincarnation.
- **Djinn Heritage**
 - **Effect:** Increase the production of Unique Buildings based on Limited Wish activity time in this Reincarnation.
 - **Old Formula:** $(0.3 * x^{0.65})\%$, where x is Limited Wish activity time this Reincarnation.
 - **New Formula:** $(30 + 0.3 * x^{0.65})\%$, where x is Limited Wish activity time this Reincarnation.
- **Makers Heritage**
 - **Effect:** Multiplicatively increase Maximum Mana based on Tax Collection casts in this Era.
 - **Old Formula:** $(2 * \log_{10}(1 + x)^{1.75})\%$, where x is Tax Collection casts this Era.
 - **New Formula:** $(\ln(1 + x)^{1.75})\%$, where x is Tax Collection casts this Era.

Advanced Heritages

- **Old Unlock Requirement:** Faction's Master Trophy, 6 hours of the respective Faction spell's activity time.
- **New Unlock Requirement:** Faction's Master Trophy, 1 hour of the respective Faction spell's activity time.
- **Advanced Heritage's Matching Lineage Bonus**
 - **Old Formula:** $(1 + 0.3 * L)$, where L is current Lineage level.
 - **New Formula:** $(1 + 0.2 * L)$, where L is current Lineage level.
- **Advanced Elven Heritage**
 - **Old Effect:** Multiplicatively increase Faction Coin find chance based on clicks made in this Reincarnation.
 - **New Effect:** Multiplicatively increase Autoclick power based on Faction Coins found in this Era.
 - **Formula:** $(0.2 * \ln(1 + x)^{0.8})\%$, where x is Faction Coins found this Era.
- **Advanced Goblin Heritage**
 - **Effect:** Multiplicatively increase Tax Collection worth based on Gems owned.
 - **Old Formula:** $(0.25 * \log_{10}(1 + x)^{0.95})\%$, where x is Gems owned.
 - **New Formula:** $(0.15 * \ln(1 + x)^{0.95})\%$, where x is Gems owned.
- **Advanced Undead Heritage**
 - **Old Effect:** Assistants count more based on Offline production.
 - **New Effect:** Assistants count more based on time spent offline in this Reincarnation.
 - **Formula:** $(0.5 * x^{0.5})\%$, where x is time spent offline this Reincarnation.
- **Advanced Faceless Heritage**
 - **Effect:** Gain assistants based on Unique Buildings built.
 - **Old Formula:** $(2.5 * x^{0.8})$, where x is Unique Buildings built.
 - **New Formula:** $(2.25 * x^{0.8})$, where x is Unique Buildings built.
- **Advanced Dwarven Heritage**
 - **Old Effect:** Increase the production of all buildings based on Excavations Made and Excavation Resets in this Reincarnation.
 - **New Effect:** Increase the production of all buildings based on Excavation depth.
 - **Note:** Formula unchanged.
- **Advanced Drow Heritage**
 - **Effect:** Increase the production of all buildings based on Offline production and time spent in this Era.
 - **Old Formula:** $(0.0008 * \log_{10}(1 + x) * y^{0.8})\%$, where x Offline production and y is time spent this Era.
 - **New Formula:** $(0.2 * \ln(1 + x) * y^{0.4})\%$, where x Offline production and y is time spent this Era.
- **Advanced Dragon Heritage**
 - **Old Effect:** Active spells count 5% more.
 - **New Effect:** Increase triggered Tax Collections based on Artifacts found.
 - **Formula:** $(1 + 0.05 * \ln(1 + x)^{1.25})$, where x is Artifacts found.

Spells & Spell Upgrades

- **Spiritual Surge**
 - **Effect:** Increase the production of all buildings based on Reincarnations made.
 - **Old Formula:** $(2500 * (R^{1.05}))^{(1 + A * 0.5)}\%$, where A is current Ascension.
 - **New Formula:** $(2500 * (R^{0.9}))\%$.
- **Blood Frenzy**
 - **Old Effect:** Increases the production of all Evil buildings by 1250%.
 - **New Effect:** Increases the production of all Evil buildings by 1500%.
- **Gem Grinder**
 - **Effect:** Multiplicatively increase production bonus from Gems based on Reincarnations made.
 - **Old Formula:** $((5000 * (1 + 0.1 * R))^{(0.8 * A)})\%$, where A is current Ascension.
 - **New Formula:** $(2500 * (1 + 0.005 * R))\%$.
- **Fairy Chanting**
 - **Mana Cost:** Reduced from 1000 to 800 mana.
 - **Old Effect:** Increase the production of Farms, Inns, and Blacksmiths by 50,000%.
 - **New Effect:** Increase the production of Farms, Inns, and Blacksmiths based on Farms, Inns, and Blacksmiths built.
 - **Formula:** $(20000 * (1 + 0.02 * x^{0.2}))\%$, where x is Farms, Inns, and Blacksmiths built.
- **Fairy Choir (Fairy Chanting Spell Upgrade)**
 - **Old Requirement:** Cast Fairy Chanting while having at least 45 assistants.

- **New Requirement:** Cast Fairy Chanting while having at least 50 assistants.
- **Moon Blessing**
 - **Effect:** Increase the production of all buildings based on clicks made in this Reincarnation.
 - **Old Formula:** $(0.7 * x^{0.7})\%$, where x is clicks made this Reincarnation.
 - **New Formula:** $(1.3 * x^{0.7})\%$, where x is clicks made this Reincarnation.
- **Sun Blessing (Moon Blessing Spell Upgrade)**
 - **Old Requirement:** Cast Moon Blessing between 6 AM and 1 PM (local time).
 - **New Requirement:** Cast Moon Blessing while having at least 5 Elven Luck triggers in this Era.
- **God's Hand**
 - **Duration:** Reduced from 20 to 10 seconds.
 - **Effect:** Increase the production of all buildings based on Mana Regeneration.
 - **Old Formula:** $(120 * x)\%$, where x is Mana Regeneration.
 - **New Formula:** $(10 * \ln(1 + x)^4)\%$, where x is Mana Regeneration.
 - **Additional Effect:** God's Hand's duration increases with time spent as Good in this Reincarnation.
 - **Formula:** $+(0.5 * x^{0.5})$, where x is time spent as Good this Reincarnation.
- **God's Rest (God's Hand Spell Upgrade)**
 - **Old Requirement:** Cast God's Hand on any Sunday.
 - **New Requirement:** Cast God's Hand while having at least 1500 Maximum Mana and 75 Mana Regeneration.
- **Goblin's Greed**
 - **Mana Cost:** Reduced from 800 to 400 mana.
 - **Duration:** Increased from 5 to 8 seconds.
 - **Effect:** Increase the production of all buildings based on Faction Coins found in this Era.
 - **Old Formula:** $(0.75 * \ln(1 + x)^{3.15})\%$, where x is Faction Coins found this Era.
 - **New Formula:** $(30 + 3 * \ln(1 + x)^3)\%$, where x is Faction Coins found this Era.
 - **Effect:** Instantly produce Faction Coins based on Gems owned.
 - **Old Formula:** $+(20 + \ln(1 + x)^3)$, where x is Gems owned.
 - **New Formula:** $+(80 + 2.25 * \ln(10 + x)^{2.25})$, where x is Gems owned.
- **Greed Drive (Goblin's Greed Spell Upgrade)**
 - **Old Requirement:** Cast Goblin's Greed 100 times in a row.
 - **New Requirement:** Cast Goblin's Greed while having at least 100 Royal Exchanges purchased.
 - **Old Effect:** Reduce Goblin's Greed's cost by 150 mana.
 - **New Effect:** While Goblin's Greed is active, Tax Collection costs 10% less mana.
- **Night Time**
 - **Mana Cost:** Reduced from 1000 to 800 mana.
 - **Old Effect:** Increase the production of assistants by 30% per Necropolis built.
 - **New Effect:** Increase the production of assistants based on Necropolises built.
 - **Formula:** $(50 + 50 * x)\%$, where x is Necropolises built.
- **True Night (Night Time Spell Upgrade)**
 - **Old Requirement:** Cast Night Time between 11 pm and 6 am (local time).
 - **New Requirement:** Cast Night Time while having at least 20,000% offline production.
 - **Old Effect:** Increases Night Time bonus to assistants to 40% per Necropolis built.
 - **New Effect:** Increase Night Time bonus to assistants production based on its activity time in this Reincarnation. Time spent offline also counts 50% more.
 - **Formula:** $(0.4 * x^{0.6})\%$, where x is Night Time activity time this Reincarnation.
- **Hellfire Blast**
 - **Mana Cost:** Reduced from 1000 to 900 mana.
 - **Effect:** Increase the production of Evil Fortresses and Hell Portals based on Trophies unlocked.
 - **Old Formula:** $(200 * x^{0.8})\%$, where x is Trophies unlocked.
 - **New Formula:** $(120 * x^{0.8})\%$, where x is Trophies unlocked.
- **Lightning Strike**
 - **Mana Cost:** Reduced from 600 to 250 mana.
 - **Duration:** Reduced from 10 to 5 seconds.
 - **Old Effect:** The production of a random building is multiplied by 500% per Iron Stronghold built.
 - **New Effect:** The production of a random building is multiplied by 900% per Iron Stronghold built.
 - **Effect:** Multiplicatively increase Faction Coin find chance based on Gems owned.
 - **Old Formula:** $(10 + \log_{10}(1 + x)^2)\%$, where x is Gems owned.
 - **New Formula:** $(50 + 2 * \ln(1 + x)^{1.5})\%$, where x is Gems owned.
- **Lightning Storm (Lightning Strike Spell Upgrade)**
 - **Old Effect:** Increases Lightning Strike bonus to 750% per Iron Stronghold built..
 - **New Effect:** Increase Lightning Strike multiplier by 50%.
- **Brainwave**
 - **Old Effect:** Increase the production of all buildings by a cumulative 2% for 10 minutes.
 - **New Effect:** Increase the production of all buildings by a cumulative 20% for 10 minutes.
- **Faceless Overmind (Brainwave Spell Upgrade)**
 - **Old Effect:** Increases Brainwave ticks to 3% per second.
 - **New Effect:** Increase Brainwave multiplier by 50%.
- **Diamond Pickaxe**

- **Old Effect:** Increase clicking reward by 25% per excavation made.
 - **New Effect:** Increase clicking reward based on Excavation depth.
 - **Formula:** $(30 * x)\%$, where x is Excavation depth.
- **Combo Strike**
 - **Effect:** Increase the production of all buildings by a progressively higher value as you continue casting this spell.
 - **Old Formula:** $(30 * x^{0.9})\%$, where x is Combo Strike counter.
 - **New Formula:** $(100 * x^{0.9})\%$, where x is Combo Strike counter.
- **Perfect Combo (Combo Strike Spell Upgrade)**
 - **Old Requirement:** Cast Combo Strike 100 times in a row.
 - **New Requirement:** Cast Combo Strike 50 times in a row.
 - **Old Effect:** Increases Combo Strike base bonus.
 - **New Effect:** Increase Combo Strike counter based on your longest Era in this Reincarnation.
 - **Formula:** $+(2.5 * x^{0.5})$, where x is longest Era this Reincarnation.
- **Dragon's Breath**
 - All breaths no longer suffer from Ascension penalty.
 - **Red Breath**
 - **Effect:** Increase the production of Unique Buildings based on Faction Coins found in this Era.
 - **Old Formula:** $(2 * (\ln(1 + x)^2))\%$, where x is Faction Coins found this Era.
 - **New Formula:** $(1.75 * (\ln(1 + x)^{1.75}))\%$, where x is Faction Coins found this Era.
 - **Green Breath**
 - **Effect:** Increase the production of all buildings based on spells cast in this Reincarnation. Higher bonuses are provided to lower building tiers.
 - **Old Formula:** $(0.01 * x^{0.625} * (11 - T)^5)\%$, where x is spells cast this Era.
 - **New Formula:** $(0.01 * x^{0.4} * (11 - T)^5)\%$, where x is spells cast this Reincarnation.
 - **White Breath**
 - **Effect:** Gain assistants based on time spent as Neutral this Reincarnation.
 - **Old Formula:** $+(30 * x^{0.65})$, where x is time spent as Neutral this Reincarnation.
 - **New Formula:** $+(30 * x^{0.7})\%$, where x is time spent as Neutral this Reincarnation.
 - **Black Breath**
 - **Effect:** Increase the production of all buildings based on Dragon's Breath activity time in this Era.
 - **Old Formula:** $(0.5 * x^{0.75})\%$, where x is Dragon's Breath activity time this Era.
 - **New Formula:** $(30 + 0.85 * x^{0.85})\%$, where x is Dragon's Breath activity time this Era.
 - **New color in Ascension 2 - Yellow Breath:**
 - **Effect:** Multiplicatively increase production bonus from Gems based on assistants owned.
 - **Formula:** $(1.75 * \ln(x)^{1.75})\%$, where x is assistants owned.
- **Dragon's Roar (Dragon's Breath Spell Upgrade)**
 - **Old Requirement:** Cast Dragon's Breath while having at least 4 other active spells.
 - **New Requirement:** Cast Dragon's Breath while having at least 5 other active spells.
- **Share Benefits**
 - **Duration:** Fixed to 20 seconds.
 - **Note:** A fixed duration cannot be increased, nor can the spell with a fixed duration be reverse autocasted.
 - **Effect:** Increase the production of all buildings and multiplicatively increase Faction Coin find chance based on Share Benefits Tier.
 - **Old Production Formula:** $(((((1 + 0.01 * (120 + 1.25 * \ln(1 + x)^{1.25}))^T) - 1) * 100))\%$, where x is Tax Collection worth and T the Share Benefits Tier.
 - **New Production Formula:** $((120 + 1.25 * \ln(1 + x)^{1.25})^T)\%$, where x is Tax Collection worth and T the Share Benefits Tier.
 - **Note:** Share Benefits has a base Tax Collection worth of 120 instead of 30 seconds.
 - **Note:** Under the previous Spell Tier system, Share Benefits' production is converted from percentage to multiplier form before being raised by Spell Tiers (and Ascension penalty). Now Spell Tiers power are applied directly to Share Benefits percentage (but is still converted to multiplier form for Ascension penalty).
 - **Old Effect:** Also produce Tax Collection casts per second based on Maximum Mana.
 - **New Effect:** Also produce Tax Collection casts per second based on Maximum Mana, Tax Collection worth and triggered Tax Collection.
 - **Old Formula:** $+(0.01 * T * x)$, where x is Maximum Mana and T is Share Benefits tier.
 - **New Formula:** $+(0.001 * tTC * T * (x * TCw)^{0.7})$, where x is Maximum Mana, tTC is triggered Tax Collections, T is Share Benefits tier, and TCw is Tax Collection worth.
 - **Removed Effect:** No longer drains mana every second equal to Share Benefits cost while it is active.
 - **New Additional Effect:** While Share Benefits is active, increases mana produced stat every second based on Mana Regeneration and Maximum Mana.
 - **Formula:** $(\min(x, y)^{0.9})$, where x is Mana Regeneration and y is Maximum Mana.
- **Reap Interests**
 - **Effect:** Multiply Reap Interests worth based on Reap Interests casts in this Era.
 - **Old Formula:** $*(50000 * \log_{10}(8 + 0.1 * x))$, where x is Reap Interests casts this Era.
 - **New Formula:** $*(\ln(1 + x)^3)$, where x is Reap Interests casts this Era.
- **Temporal Flux**
 - **Mana Cost:** Reduced from 5,000 to 950 mana.

- **Effect:** Increase the production of Unique Buildings by time spent in this Era.
 - **Old Formula:** $(3.75 * (x / 60) ^ 0.825)\%$, where x is time spent this Era.
 - **New Formula:** $(x ^ 0.825)\%$, where x is time spent this Era.
- **Maelstrom**
 - **Mana Cost:** Reduced from 3500 to 700 mana.
 - **Old Effect:** Increase the production of three random buildings based on one of these stats in this Era, chosen at random: mana produced, Trophies unlocked, Faction Coins found or assistants owned.
 - **New Effect:** Increase the production of **two** random buildings based on one of these stats in this Era, chosen at random: mana produced, Trophies unlocked, Faction Coins found or assistants owned.
 - **Mana Produced:**
 - **Old Formula:** $(0.02 * \log_{10}(1 + x) ^ 5)\%$, where x is mana produced this Era.
 - **New Formula:** $(0.1 * \ln(1+x) ^ 5)\%$, where x is mana produced this Era.
 - **Trophy:**
 - **Old Formula:** $(2.5 * x ^ 0.9)\%$, where x is Trophies unlocked.
 - **New Formula:** $(5 * x ^ 0.9)\%$, where x is Trophies unlocked.
 - **Faction Coin:**
 - **Old Formula:** $(0.01 * \log_{10}(1 + x) ^ 4)\%$, where x is Faction Coins found this Era.
 - **New Formula:** $(0.01 * \ln(1 + x) ^ 4)\%$, where x is Faction Coins found this Era.
 - **Assistant:**
 - **Old Formula:** $(0.25 * \log_{10}(1 + x) ^ 5)\%$, where x is assistants owned.
 - **New Formula:** $(0.1 * \ln(1 + x) ^ 5)\%$, where x is assistants owned.
- **All Creation**
 - **Mana Cost:** Reduced from 6000 to 1100 mana.
 - **Effect:** Increase the production of all buildings based on Mana Regeneration.
 - **Old Formula:** $(0.15 * \ln(1 + x) ^ 3 + 0.75 * x ^ 0.25)\%$, where x is Mana Regeneration.
 - **New Formula:** $(0.5 * \ln(1 + x) ^ 3 + x ^ 0.5)\%$, where x is Mana Regeneration.
- **Precognition**
 - **Duration:** Reduced from 60 to 20 seconds.
 - **Effect:** Buildings, Assistants, Royal Exchanges, Spells cast and Clicks count more based on mana produced in this Era.
 - **Old Formula:** $(\ln(1 + x) ^ 1.25)\%$, where x is Mana produced this Era.
 - **Old Formula with AR2:** $(1.25 * \ln(1 + x) ^ 1.5)\%$, where x is Mana produced this Era.
 - **New Formula:** $(0.65 * \ln(1 + x) ^ 1.15)\%$, where x is Mana produced this Era.
 - **New Formula with AR2:** $(1.3 * \ln(1 + x) ^ 1.25)\%$, where x is Mana produced this Era.
- **Chrono Loading (Precognition Spell Upgrade)**
 - **Effect:** A fraction of Precognition duration is added to time spent in this Era.
 - **Old Formula:** $(100 * \ln(1 + x / 60) ^ 2.5)$, where x is Precognition duration.
 - **New Formula:** $(150 * \ln(1 + x / 60) ^ 2)$, where x is Precognition duration.
- **Limited Wish**
 - **Old Mana Cost:** 888,888 mana
 - **New Mana Cost:** 800,000 mana, decreases by 1% per minute, resets every 60 minutes.
 - **Note:** Cost decreases continuously at the rate of -133.33 per second at normal cost.
 - **Note:** Timer starts upon a new Era (when you abdicate).
 - **Duration:** Reduced from a fixed 12 seconds to a fixed 6 seconds.
 - **Effect:** Multiplicatively Increase a random stat based on Limited Wish activity time and casts this Era.
 - **Note:** Bonus to the production of all buildings is now separated from the rest.
 - **Old Formula:** $(2.25 * (\ln(1 + x) ^ 1.35) * y ^ 0.45)\%$, where x is Limited Wish activity time this Era, y is a random number between 1 and Limited Wish casts this Era rolled on cast.
 - **New Production Formula:** $(50 + 5 * \ln(1 + x) ^ 1.75 * y ^ 0.25)\%$, where x is Limited Wish activity time this Era, y is a random number between 1 and Limited Wish casts this Era rolled on cast.
 - **New Non-Production Formula:** $(250 + 2.5 * \ln(1 + x) ^ 1.75 * y ^ 0.5)\%$, where x is Limited Wish activity time this Era, y is a random number between 1 and Limited Wish casts this Era rolled on cast.
- **Persistent Entropy (Limited Wish Spell Upgrade)**
 - **Old Effect:** Give Limited Wish a headstart of 150 casts.
 - **New Effect:** Give Limited Wish a headstart of 500 casts.
- **Infinite Spiral**
 - **Effect:** Increase assistants based on Maximum Mana, Maximum Mana based on Faction Coin find chance, and Faction Coin find chance based on Excavation depth.
 - **Old Maximum Mana Formula:** $(1.5 * \log_{10}(1 + x) ^ 1.5)\%$, where x is Faction Coin find chance.
 - **New Maximum Mana Formula:** $(1.5 * \ln(1 + x) ^ 1.5)\%$, where x is Faction Coin find chance.
 - **Old Faction Coin Find Chance Formula:** $(10 + 0.05 * (x * y) ^ 0.75)\%$, where x is Excavations Made this Reincarnation and y is Excavation Resets this Reincarnation
 - **New Faction Coin Find Chance Formula:** $(10 + 0.1 * x ^ 0.75)\%$, where x is Excavation depth.
- **Reality Crater (Infinite Spiral Spell Upgrade)**
 - **Old Requirement:** Cast Infinite Spiral while having at least 10 Excavation Resets this Era.
 - **New Requirement:** Cast Infinite Spiral while having at least 3 Excavation Resets this Era.
- **Catalyst**

- **Old Effect:** Activate a random Vanilla or 1st alignment spell at Tier 7.
 - **New Effect:** Activate **two** random Vanilla or 1st alignment spells at one Tier below the Ascension's maximum.
 - **Note:** Catalyst casts spells at Tier X in Ascension X (Tier 2 in Ascension 2).
- **Twisting Nether**
 - **Mana Cost:** Reduced from 1,000,000 to 100,000 mana.
 - **Old Effect:** Lineage levels count +1 more per Tier.
 - **New Effect:** Lineage levels count +2 more per Tier.

Spell Tiers

- **Note:** Players updating to 4.3 will automatically unlock all Tiers of the previous Ascensions (Players in Ascension 3 will start with all spell Tiers unlocked in Ascension 1-2 available).
- **Note:** Players updating to 4.3 will have all Tiers higher than their current Ascension’s maximum removed from their savefile.

Spell categories

- Spells and Spell Tiers are now separated from standard Ascension penalty.
- The majority of spells follow the same Tiering system for their unlocks, functionalities and Ascension penalties, with some exceptions.
- We call these 2 groups “Normal spells” and “Extraordinary spells”, respectively.
- **Extraordinary spells:**
 - Can roughly be divided further into 4 subcategories:
 - **Zero-duration spells:** Tax Collection and Reap Interests.
 - These spells do not have Tiers, nor do they suffer from Ascension penalty.
 - **Tier-less spells:** Catalyst, Chaos Madness and all Event spells.
 - **Self-Tier spells:** Share Benefits and Twisting Nether.
 - **Dragon’s Breath:** Dragon’s Breath.
- **Normal spells:** all remaining spells.

Normal spells

- **Tiers Count**
 - Normal spells now only unlock one new Tier per Ascension (maximum of Tier 2 in Ascension 1 and Tier 5 in Ascension 4 can be unlocked).
- **Tiers Unlock**
 - [Dragon Unlock](#) Stages unlock the ability purchase Tier upgrades for spells. With Tiers for Common spells (Call to Arms & Spiritual Surge), Evil spells, Good spells and then all remaining spells being unlocked after completing Stage 1, 2, 3 and 4 respectively.
 - The first purchase of a Normal spell’s Tier upgrade comes with a quest that gets harder at higher tiers, consisting of a Time Requirement and a Themed Requirement.
 - **Time Requirement:** Tiers no longer have their Time Requirement reduced by your total amount of unlocked Tiers, instead they have a fixed requirement corresponding to their current Tier.
 - **Formula:** (3,600 * T) activity time This Reincarnation, where T is the spell’s **current** Tier (T = 1 for Tier 2 unlocks).
 - **Themed Requirement:** These are quest-like challenges themed around the spell (similar to Lineage Perk 2 challenges) that need to be completed to purchase the Tier for the first time.
 - After the first purchase, the Tier is permanently unlocked for that spell. The second purchase onward will only cost Coins and Faction Coins.
 - Additionally, at Tier 2 and above, each spell gains a Bonus Effect that scales with Tiers.

Name	Themed Requirement (This Era unless specified otherwise)	Tier 2+ Bonus Effect (Stack additively per Tier unless specified otherwise)
Call to Arm	(60,000 * T / A) buildings built	Buildings count 5% more
Spiritual Surge	(60 * T) Reincarnations made	Reincarnations count 5% more
Holy Light	(200,000 * T) clicks made this Reincarnation	Multiplicatively increase Mana Regeneration by 10%
Fairy Chanting	(40,000 * T) assistants owned	Multiplicatively increase Fairy Chanting duration by 10%
Moon Blessing	(8e12 * T) Faction Coins found	Autoclick 2 additional times per second
God’s Hand	(500,000 *T) Mana Regeneration	Increase duration bonus coefficient by 0.05 ¹
Diamond Pickaxe	(4,000 * T) Excavation depth	Multiplicatively increase Faction Coin find chance by 10%
Blood Frenzy	(7,200 * T) Evil spells activity time this Reincarnation	Increase the production of Non-Unique Buildings by 500%
Goblin’s Greed	(1e6 * T) Tax Collection casts	Increase triggered Tax Collections by +1
Night Time	(80,000 * T)% Offline production	Multiplicatively increase assistants by 5%
Hellfire Blast	(12 * T) Hellfire Blast casts within 5 minutes of a new Era	Evil spells cast count 50% more.
Combo Strike	(100 * T) Combo Strike counters	Combo Strike casts increase the stat by (T ^ 2) instead

Gem Grinder	(1e30 * 10 ^ (3 * T)) Gems owned	Multiplicatively increase Royal Exchange bonus by 10%
Lightning Strike	(15,000 * T)% Royal Exchange bonus	Lightning Strike counts 75% more Iron Strongholds.
Grand Balance	(200,000 * T) Maximum Mana	Multiplicatively increase Maximum Mana by 5%
Brainwave	(3,600 * T) Brainwave duration	Give Brainwave a 10 minutes headstart,
Temporal Flux	(300 * T) time spent	Mana produced in this Era counts 10% more
Precognition	(360 * T) Precognition duration	Research Points / Budget count 10% more
Maelstrom	(4 * T) active spells	Affect 1 more random building.
Limited Wish	(1e10 ^ (0.25 * (T + 1))) Maximum Mana	Limited Wish casts count (10 * T ^ 2)% more
All Creation	(100 * T) Royal Exchanges purchased	Multiplicatively increase production bonus from Gems by 10%
Infinite Spiral	(1.6e41 * T) Faction Coins found	Multiplicatively increase offline bonus by 10%

- For Themed Requirement, T is the spell’s **current** Tier (T = 1 for Tier 2 unlocks).
- Bonus Effects do not suffer from Ascension penalty.
- 1: **God’s Hand**
 - **Duration Formula:** +((0.5 + 0.05 * (T - 1)) * x ^ (0.5 + 0.05 * (T - 1))), where x is time spent as Good this Reincarnation and T is God’s Hand Tier.

● **Coins & Faction Coins Costs**

- Coins costs are now constant for all Tier upgrades of a spell (Tier upgrades from previous Ascensions are still free, but the cost of Tier 3 in Ascension 2 will be the same as Tier 2 in Ascension 1)
- Faction Coins costs have been adopted by 2nd alignment spells, scaling formula unchanged.
 - **Formula:** (C ^ (1 + 0.15 * (T - 2))), where C is base Faction Coins costs and T is the Tier upgrade’s Tier.
- Refer to [Spell Tiers cost table](#) for full list of costs.

● **Mana Cost Scaling**

- **Formula:** (C ^ (1 + (0.6 - M) * T)), where C is base mana cost, M is the sum of cost scaling reductions (such as S1275) and T is currently active Tier.

● **Ascension Penalty**

- **Un-Tiered Formula:** (B ^ (0.1 / A)), where B is the spell’s original bonus in multiplier form and A is current Ascension.
 - Un-Tiered spells are spells you have not unlocked Tier 2 for yet.
- **Base Formula:** (B ^ ((0.5 / A) * 0.5 ^ (A - T + 1))), where B is the spell’s original bonus in multiplier form, T is currently active Tier and A is current Ascension.

	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Asc. 0	B ^ 1	-	-	-	-
Asc. 1	0.25	0.5	-	-	-
Asc. 2	0.0625	0.125	0.25	-	-
Asc. 3	0.02083	0.04167	0.08333	0.16667	-
Asc. 4	0.00781	0.01562	0.03125	0.0625	0.125

- **Extra Tiers Formula:** (B ^ ((0.5 / A) * 0.5 ^ (0.5 * (A - T + 1)))), where B is the spell’s original bonus in multiplier form, T is currently active Tier and A is current Ascension.
 - Spells can go above their normal Ascension maximum if they are given additional Tiers from other upgrades. If they do, this formula is used instead.

Extra Tiers	0	1	2	3	4
Asc. 1	0.5	0,70711	1	1,41421	2
Asc. 2	0.25	0,35355	0,5	0,70711	1
Asc. 3	0.16667	0,23570	0,33333	0,47140	0,66667
Asc. 4	0.125	0,17677	0,25	0,35355	0,5

- **Note:** The table does not account for whether reaching the displayed amount of extra Tiers in a given Ascension is possible or not, only that if it is possible, those would be the bonus.

● **Offline production**

- Tier Upgrades purchased increase Offline production and Offline gains of Faction Coins.
 - **Production Formula:** ((x ^ (2 / max(3, A)) + y ^ (2 / max(3, A))) ^ 0.4)%, where x is offline Mana Regeneration, y is Maximum Mana and A is current Ascension.

- **Note:** Stack multiplicatively with all other Tier upgrades, still suffer from Ascension penalty.
- **Faction Coins Formula:** $(200)\%$
- **Note:** Stack additively with Tier upgrades of the same spell, multiplicatively with other Tier upgrades of different spells.

Extraordinary spells

- **Note:** Share Benefits, Reap Interests, Appraisal Vantage and Twisting Nether are not affected by effects that give additional Tiers to or reduce the cost of Faction spells.
- **Tier-less spells**
 - These spells do not have Tiers, as such they behave similarly to un-Tiered Normal spells.
 - **Ascension penalty:** $(B ^ (0.1 / A))$, where B is the spell's original bonus in multiplier form and A is current Ascension.
- **Self-Tier spells**
 - These spells have their own Tier system that can go up to 99 Tiers (36 for Share Benefits in Ascension 1).
 - **Requirement:** None.
 - **Cost Scaling:** $(C * (3 - M) ^ T)$, where C is base mana cost, M is the sum of cost scaling reductions (such as S1275) and T is currently active Tier.
 - **Note:** Cost scaling reduction effects have different values for Normal spells and Self-Tier spells. Example: S1275 is $-(0.1)$ for Normal spells and $-(0.5)$ for these spells.
 - **Note:** Share Benefits Tier 40 and above no longer have increased cost scaling.
 - **Note:** Share Benefits still follows the standard Ascension penalty.
 - **Share's Benefits Ascension Penalty:** $(B ^ (0.1 ^ (A - 1)))$, where B is the spell's original bonus in multiplier form and A is current Ascension.
- **Dragon's Breath**
 - Dragon's Breath uses the same Tier system as Normal spells, except for a few differences:
 - **Tier count:** Dragon's Breath can be tiered up to Tier 5 in Ascension 1, but no more Tiers are unlocked in later Ascensions.
 - **Time Requirement:** None.
 - **Themed Requirement:** $(48 + 6 * T)$ Reincarnations made.
 - **Bonus Effect:** None.
 - **Cost Scaling:** Dragon's Breath is treated as a Normal spell for cost scaling and cost scaling reductions.
 - **Ascension Penalty:** No Dragon's Breath color suffers from any type of Ascension penalty.

Challenges

- **Note:** Challenges no longer suffer from Ascension penalty.

Fairy

- **Fairy Challenge 1** (Pixie Mischief)
 - **Old Effect:** Gain assistants based on Fairy upgrades purchased.
 - **New Effect:** Gain assistants based on Fairy Chanting activity time in this Era.
 - **Formula:** $+(25 + 15 * x ^ 0.25)$, where x is Fairy Chanting activity time this Era.
- **Fairy Challenge 2** (Donations)
 - **Old Effect:** Tax collections give 10 more seconds worth of coins and Faction Coins.
 - **New Effect:** Increase Tax Collection worth by 10%.
- **Fairy Challenge 3** (Enchanted Lands)
 - **Old Challenge:** Gain at least 60 assistants from Swarm of Fairies (FR9) in under a minute of a new Era.
 - **New Challenge:** Gain at least 150 assistants from Swarm of Fairies (FR6) in under 2 minutes of a new Era.
 - **Old Effect:** Multiplicatively Increase Mana Regeneration based on buildings built.
 - **New Effect:** Multiplicatively Increase Mana Regeneration based on Farms, Inns, and Blacksmiths built.
 - **Old Formula:** $((0.1 * x) ^ 0.225)\%$, where x is buildings built.
 - **New Formula:** $((0.5 * x) ^ 0.25)\%$, where x is Farms, Inns, and Blacksmiths built.

Elven

- **Elven Challenge 1** (Advanced Civilization)
 - **Old Challenge:** Find at least 400,000 Elven Coins in under 1 hour of a new game.
 - **New Challenge:** Find at least 100,000 Elven Coins in under 1 hour of a new game.
 - **Effect:** Reduces Elven Exchange cost multiplier. $-(0.025)$
 - **New Additional Effect:** Clicks count more based on Elven Luck triggered in this Era.
 - **Formula:** $(10 + x ^ 0.5)\%$, where x is Elven Lucks triggered this Era.
- **Elven Challenge 2** (Light Collector)
 - **Effect:** Autoclicks once per second
 - **New Additional Effect:** Multiplicatively increase Mana Regeneration based on clicks made in this Era.
 - **Formula:** $(x ^ 0.25)\%$, where x is clicks made this Era.
- **Elven Challenge 3** (Enchanted Lands)
 - **Old Challenge:** Buy 150 Royal Exchange of each Faction while having 0 Drow Exchanges.
 - **New Challenge:** Buy at least 200 Royal Exchange of each Faction while having 0 Drow Exchanges.
 - **Old Effect:** Increase your Mana Regeneration by +0.85 m/s for every 100 Royal Exchanges purchased.
 - **New Effect:** Multiplicatively increase Faction Coin find chance based on clicks made in this Era.
 - **Formula:** $(x ^ 0.25)\%$, where x is clicks made this Era

- **Elven Challenge Reward** (Star Blessing)
 - **Old Effect:** Automatic clicks from Sun Blessing always trigger Elven Luck.
 - **New Effect:** While Moon Blessing is active, increase Elven Luck stat every second. Increase progressively over its duration.
 - **Formula:** $+(1 + x^{0.2})$ per second, where x is Moon Blessing runtime.

Angel

- **Angel Challenge 1** (Efficient Magic)
 - **Old Challenge:** Cast Holy Light 50 times during daytime (between 6 AM and 6 PM local time) within 20 minutes of a new Era.
 - **New Challenge:** Cast Holy Light 50 times within 20 minutes of a new Era.
 - **Effect:** Reduce all spells cost by 10%.
 - **New Additional Effect:** While Holy Light is active, increase the production of all buildings by 100%.
- **Angel Challenge 2** (Mana Crypts)
 - **Old Challenge:** Produce 500,000 mana without casting a single Tax Collection within 3 hours of a new Era.
 - **New Challenge:** Produce 400,000 mana without casting a single Tax Collection within 3 hours of a new Era.
- **Angel Challenge 3** (Efficient Magic)
 - **Old Challenge:** Build at least 2000 Halls of Legends and no Good buildings with Demon Bloodline purchased.
 - **New Challenge:** Build at least 2400 Halls of Legends and no Good buildings with Demon Bloodline purchased.

Goblin

- **Goblin Challenge 1** ((Discount Season)
 - **Old Effect:** Green Fingers Discount (GB9) triggers every 2 minutes instead, and casts 10 Tax Collections upon triggering.
 - **New Effect:** Green Fingers Discount (GB9) triggers every 30 seconds instead, and casts 10 Tax Collections upon triggering.
- **Goblin Challenge 2** (Elite Warriors)
 - **Old Effect:** 25% of your purchased upgrades are added to your total trophy count for Hellfire Blast and Hall of Legends purposes.
 - **New Effect:** Multiplicatively increase production bonus from Gems based on Tax Collection casts this Era.
 - **Formula:** $(2 * \ln(1 + x)^2)\%$, where x is Tax Collection casts this Era.
- **Goblin Challenge 3** (Smuggled Jewels)
 - **Old Effect:** Increase production bonus from Gems by +0.01% for each upgrade purchased.
 - **New Effect:** Increase triggered Tax Collections additionally by 1, and multiplicatively by 25%.

Undead

- **Undead Challenge 1** (Deadly Impatience)
 - **Old Challenge:** Gain 6 assistants from Undead Heritage.
 - **New Challenge:** Research at least 20000% offline production.
 - **Old Effect:** Undead Heritage works 5000% faster.
 - **New Effect:** Increase Mana Regeneration additively based on assistants owned and multiplicatively by 10%.
 - **Formula:** $+(4.5 * \ln(1 + x)^2)$, where x is assistants owned.
- **Undead Challenge 3** (Death Knights)
 - **Old Challenge:** Find 1e8 (100 M) Faction coins.
 - **New Challenge:** Find 1e9 (1 B) Faction coins.
 - **New Effect:** Multiplicatively increase assistants by 10%.
 - **New Effect:** Multiplicatively increase assistants and Offline production by 10%.
- **Undead Challenge Reward** (Midnight time)
 - **Old Effect:** Increase Night Time assistant bonus based on time spent offline in this Reincarnation.
 - **New Effect:** Increase Night Time assistant bonus based on time spent in this Reincarnation.
 - **Old Formula:** $(0.2 * (x / 60)^{0.7})\%$, where x is time spent offline this Reincarnation.
 - **New Formula:** $(0.25 * x^{0.75})\%$, where x is time spent this Reincarnation.

Demon

- **Demon Challenge 1** (Trophy Collectors)
 - **Old Challenge:** Find 5000 Demon Coins without using Gem Power, Reincarnation Power, Researches or Excavations.
 - **New Challenge:** Find 2000 Demon Coins without using Gem Power, Reincarnation Power or Excavations.
- **Demon Challenge 3** (Passage to Tartarus)
 - **Old Challenge:** Have at least 1750 Halls of Legends and 333 Trophies.
 - **New Challenge:** Have at least 2500 Halls of Legends and 333 Trophies.

Titan

- **Titan Challenge 1** (Rich Followers)
 - **Old Effect:** Gain 1 assistant for every 80 Royal Exchanges purchased.
 - **New Effect:** Gain assistants based on Royal Exchanges purchased.
 - **Formula:** $+(0.8 * x^{0.8})$, where x is Royal Exchanges purchased.
- **Titan Challenge 2** (Harmony of Thoughts)

- **Effect:** Increases the production of buildings based on time spent not playing as Faceless in this Reincarnation.
 - **Old Formula:** $(x^{0.7})\%$, where x is time spent not playing as Faceless this Reincarnation.
 - **New Formula:** $(1.25 * x^{0.6})\%$, where x is time spent not playing as Faceless this Reincarnation.
- **Titan Challenge 4** (Storm of Wealth)
 - **Old Challenge:** Have Lightning Strike targets Halls of Legends twice in a row while having all building types and no researches.
 - **New Challenge:** Cast Lightning Strike while having at least 200 Angel and Goblin Exchanges, without using any researches.
 - **Old Effect:** Increase the production of all buildings based on Lightning Strike casts in this Reincarnation.
 - **New Effect:** Multiplicatively increase Royal Exchange bonus based on Halls of Legends built.
 - **Formula:** $(x^{0.5})\%$, where x is Halls of Legends built.

Druid

- **Druid Challenge 1** (Silent Assistance)
 - **Effect:** Gain assistants based on time spent in this Era.
 - **Old Formula:** $+(0.7 * x^{0.7})$, where x is time spent this Era.
 - **New Formula:** $+(1.3 * x^{0.7})$, where x is time spent this Era.
- **Druid Challenge 2** (Balanced Current)
 - **Old Effect:** Multiplicatively increase Mana regeneration by 1% for every 5000 buildings built.
 - **New Effect:** Multiplicatively increase Mana regeneration by 1% for every 1000 buildings built.
- **Druid Challenge 3** (Eldritch Architecture)
 - **Old Effect:** Gain 1.5 Maximum Mana for every 100 buildings built.
 - **New Effect:** Gain 5 Maximum Mana for every 100 buildings built.
- **Druid Challenge 4:** (Overflowing Magic)
 - **Effect:** Increase the production of Non-Unique Buildings based on the duration of your longest spell. Gives the best bonus to the lowest tier.
 - **Old Formula:** $((7 * x^{0.7}) * (12 - T))\%$, where x is the duration of your longest spell.
 - **New Formula:** $((3 * x^{0.7}) * (12 - T))\%$, where x is the duration of your longest spell.
- **Druid Challenge Reward** (Primal Balance)
 - **Effect:** Grand Balance affects extra buildings based on Mana produced in this Reincarnation.
 - **Old Formula:** $+(0.00001 * x)^{(0.2 - 0.025 * A)}$, where x is Mana produced in this Reincarnation and A is your Ascension.
 - **New Formula:** $+(0.00001 * x)^{(0.4 / (A + 2))}$, where x is Mana produced in this Reincarnation and A is your Ascension.
 - **Note:** Refer to [Primal Balance target table](#).

Faceless

- **Faceless Challenge 1** (Recruitment)
 - **Old Effect:** Gain 1 assistant every minute. Resets every hour.
 - **New Effect:** Gain 15 assistants every minute. Resets every hour.
- **Faceless Challenge 2** (Mystic Maze)
 - **Old Effect:** Increase Maximum Mana by 10 for every 500 buildings.
 - **New Effect:** Increase Max Mana based on the highest amount of buildings built in this Reincarnation.
 - **Formula:** $+(6 * (x^{0.6}))\%$, where x is the highest amount of buildings built this Reincarnation.
- **Faceless Challenge 3** (Cyclopean Army)
 - **Old Challenge:** Cast Call to Arms, Gem Grinder and Spiritual Surge during the last 20 seconds of Brainwave.
 - **New Challenge:** Have Call to Arms, Gem Grinder, Spiritual Surge and Brainwave active at the same time.
 - **Effect:** Multiplicatively increase assistants based on Royal Exchange bonus.
 - **Old Formula:** $(0.45 * x^{0.45})\%$, where x is Royal Exchange bonus.
 - **New Formula:** $(1.8 * x^{0.4})\%$, where x is Royal Exchange bonus.
- **Faceless Challenge 4** (Omnipresence)
 - **Old Challenge:** Have a Hive Mind (FC9) bonus of at least 500%. (2d 21h 26m 40s)
 - **New Challenge:** Have a Hive Mind (FC9) bonus of at least 100%. (2h 46m 40s)
- **Faceless Challenge Reward** (Focused Thoughts)
 - **Old Effect:** Give Brainwave a headstart of 1 second for every 5 seconds of its activity time in this Era, with a minimum of 1 minute.
 - **New Effect:** Give Brainwave a 10 minutes headstart, increasing based on its activity time in this Era.
 - **Formula:** $+(600 + 0.4 * x^{0.8})$, where x is Brainwave activity time this Era.

Dwarven

- **Dwarven Challenge 1** (Enchanted Crystals)
 - **Old Challenge:** Cast 20 Tax Collections while having at least 4 active spells.
 - **New Challenge:** Cast 750 Tax Collections while having at least 4 active spells.
- **Dwarven Challenge 3**
 - **Old Effect:** Also multiplicatively increase Faction Coin find chance by 25%.
 - **New Effect:** Also multiplicatively increase Faction Coin find chance by 150%.
- **Dwarven Challenge 4**

- **Old Effect:** Increase Holy Light bonus based on the combined amount of Knights Jousts and Wizard Towers built.
 - **New Effect:** While Holy Light is active, increase the production of all buildings based on the combined amount of Knights Jousts and Wizard Towers built.
 - **Formula:** $(5 * x^{0.3})\%$, where x is the number of Knight Jousts and Wizard Towers you own.
- **Dwarven Challenge 5** (Underground Foundations)
 - **Old Effect:** All buildings count 20% more.
 - **New Effect:** All buildings count 10% more.

Drow

- **Drow Challenge 1** (Organized Crime)
 - **Old Challenge:** Have Honor Among Killers (DW2) with at least 500 trophies and 1000 Royal Exchanges purchased.
 - **New Challenge:** Have at least 500 trophies, 1000 Royal Exchanges purchased and 250 Combo Strike counters in this Era.
 - **Effect:** Increase Royal Exchange bonus based on Trophies unlocked.
 - **Old Formula:** $+(0.2 * x^{0.8})\%$, where x is Trophies unlocked.
 - **New Formula:** $+(0.8 * x^{0.8})\%$, where x is Trophies unlocked.
- **Drow Challenge 2** (Dark Elegance)
 - **Effect:** Increase the production of all buildings based on Faction Coins found in this Era
 - **Old Formula:** $(\log(1 + x)^2)\%$, where x is Faction Coins found this Era.
 - **New Formula:** $(\ln(1 + x)^2)\%$, where x is Faction Coins found this Era.
- **Drow Challenge 3** (Sorcerer's Pact)
 - **Old Effect:** Increase Offline Time (this Era) based on spells cast in this Reincarnation.
 - **New Effect:** Increase Offline gain of spell activity time and Faction Coins based on Offline production.
 - **Formula:** $(0.05 * \ln(1 + x)^{1.5})\%$, where x is Offline production.
- **Drow Challenge 4** (Trained Assassins)
 - **Effect:** Increases Offline Production based on time spent in this Era.
 - **Old Formula:** $(x^{0.7})\%$, where x is time spent this Era.
 - **New Formula:** $(2 * x^{0.8})\%$, where x is time spent this Era.
- **Drow Challenge 5** (Shadow Mirage)
 - **Old Effect:** 5% of your alignment spell bonus is applied passively.
 - **New Effect:** Multiplicatively increase triggered Tax Collections based on Royal Exchange bonus.
 - **Formula:** $(5 + 2.5 * x^{0.25})\%$, where x is Royal Exchange bonus.

Dragon

- **Dragon Challenge 1** (Sky Monarch)
 - **Old Requirement:** Reincarnation 48+
 - **New Requirement:** Reincarnation 51+
 - **Old Challenge:** Build 6,500 Halls of Legends.
 - **New Challenge:** Build 8,000 Halls of Legends.
- **Dragon Challenge 2** (Barkscales)
 - **Old Requirement:** Reincarnation 51+
 - **New Requirement:** Reincarnation 54+
 - **Old Challenge:** Produce at least 1e10 (10 B) mana in this Era. Have Grand Balance affect 7 buildings.
 - **New Challenge:** Produce at least 1e9 (1 B) mana in this Era. Have Grand Balance affect 5 buildings.
 - **Effect:** Increase the production of Non-Unique Buildings based Grand Balance targets.
 - **Old Formula:** $(20 * x^2)\%$, where x is Grand Balance targets.
 - **New Formula:** $(30 * x^3)\%$, where x is Grand Balance targets.
 - **New Additional Effect:** Also increase Maximum Mana and Mana Regeneration based on Grand Balance activity time in this Reincarnation.
 - **Maximum Mana Formula:** $+(300 * x^{0.7})$, where x is Grand Balance activity time this Reincarnation.
 - **Mana Regeneration Formula:** $+(30 * x^{0.7})$, where x is Grand Balance activity time this Reincarnation.
- **Dragon Challenge 3** (Serpent Queller)
 - **Old Requirement:** Reincarnation 54+
 - **New Requirement:** Reincarnation 57+
 - **Old Challenge:** Have at least 8 days of Dragon and Faceless playtime combined, with at least 2 days of each (All Time)
 - **New Challenge:** Have at least 3 days of Dragon and Faceless playtime combined, with at least 1 days of each (All Time)
 - **Old Effect:** Faction Coin find chance from Evolutive Mutation (FC2) becomes multiplicative with increased effect.
 - **New Effect:** Faction Coin find chance from Evolutive Mutation (FC2) becomes multiplicative. Improve the effects of Evolutive Mutation (FC2) and Deep Memory (FC3). Remove one Ascension penalty from Hive Mind (FC9).
 - **FC2** (Evolutive Mutation)
 - **Effect:** Increase Faction Coin find chance based on the highest amount of Labyrinths built in this Reincarnation.
 - **Formula:** $+(12 + 3 * x^{0.6})$, where x is the highest amount of Labyrinths built this Reincarnation.
 - **Improved Formula:** $(12 + 3 * x^{0.65})\%$, where x is the highest amount of Labyrinths built this Reincarnation.

- **FC3 (Deep Memory)**
 - **Effect:** Multiplicatively increase assistants based on the time spent on your longest Era in this Reincarnation.
 - **Formula:** $(0.6 * x^{0.6})\%$, where x is your longest Era this Reincarnation.
 - **Improved Formula:** $(x^{0.7})\%$, where x is your longest Era this Reincarnation.
- **Dragon Challenge 4 (Draconstellation)**
 - **Old Requirement:** Reincarnation 57+
 - **New Requirement:** Reincarnation 60+
 - **Old Challenge:** Have at least 4 Dragon's Breaths active with 8,000 Iron Strongholds.
 - **New Challenge:** Have at least 3 Dragon's Breaths active with 8,000 Iron Strongholds.
 - **Effect:** Faction coins from excavations are increased based on Artifacts found.
 - **Old Formula:** $(x^6)\%$, where x is Artifacts found.
 - **New Formula:** $(x^5)\%$, where x is Artifacts found.
 - **New Additional Effect:** Also increase the production of all buildings based on Excavation depth.
 - **Formula:** $(x^{0.8})\%$, where x is Excavation depth.
- **Dragon Challenge 5 (Ancient Incantation)**
 - **Old Requirement:** Reincarnation 60+
 - **New Requirement:** Reincarnation 63+
 - **Old Challenge:** Have 5 spells active at tier 5.
 - **New Challenge:** Have 12 active spells.
 - **Effect:** Increase Tax Collection worth based on active spells.
 - **Old Formula:** $(30 * x^{0.8})\%$, where x is active spells.
 - **New Formula:** $(40 * x^{0.8})\%$, where x is active spells.
- **Dragon Challenge 6 (Dracomet Vault)**
 - **Old Requirement:** Reincarnation 63+
 - **New Requirement:** Reincarnation 66+
 - **Old Effect:** Increase production bonus from Gems over time based on Artifacts found and time spent in this Era.
 - **New Effect:** Multiplicatively increase production bonus from Gems over time based on Artifacts found and time spent in this Era.
 - **Old Formula:** $+(0.8 * x^{0.8} * (t / 60)^{0.8})\%$, where x is Artifacts found and t is time spent this Era.
 - **New Formula:** $(0.03 * x^{0.6} * t^{0.9})\%$, where x is Artifacts found and t is time spent this Era.
- **Dragon Challenge Reward (Prismatic Breath)**
 - **Old Effect:** Reincarnations count 50% more while Dragon's Breath is at tier 5 or higher.
 - **New Effect:** Reincarnations count 5% more per active Dragon's Breath tier.

Archon

- **Archon challenge 1 (God's Plan)**
 - **Old Challenge:** Have a Call to Arms bonus of at least 1e7 (10 M)% and at least 200,000 Good buildings.
 - **New Challenge:** Have a Call to Arms bonus of at least 1,500% and at least 150,000 Good buildings.
 - **Effect:** Increase Mana Regeneration additively and multiplicatively based on Order buildings built.
 - **Old Additive Formula:** $+(0.2 * x^2)$, where x is Order buildings built.
 - **New Additive Formula:** $+(x^2)$, where x is Order buildings built.
 - **Old Effect:** Precognition also increases Seraphim Wings (AN12) and God's Hand bonus, by 2 times its (Precognition's) bonus.
 - **New Effect:** Precognition also increases Seraphim Wings (AN12) and God's Hand bonus, by 3 times its bonus.
- **Archon Challenge 2 (An Untimely Death)**
 - **Effect:** Multiplicatively increase assistants based on Offline production.
 - **Old Formula:** $(2 * \log_{10}(1 + x)^2)\%$, where x is offline production.
 - **New Formula:** $(2.5 * \ln(1 + x)^{2.5})\%$, where x is offline bonus production.
 - **Old Effect:** Temporal Flux also increases Offline production.
 - **New Effect:** Temporal Flux also increases Offline production and gain 1 tier.
- **Archon Challenge 3 (Titanomancy)**
 - **Old Challenge:** Have a Royal Exchange bonus of at least 5,000% within 5 minutes of a new Era.
 - **New Challenge:** Have a Royal Exchange bonus of at least 15,000% within 5 minutes of a new Era.
 - **Old Effect:** Multiplicatively increase time spent in this Era based on Royal Exchanges purchased.
 - **New Effect:** Increase Royal Exchange bonus based on Royal Exchanges purchased.
 - **Formula:** $+(0.3 * x^{0.7})\%$, where x is Royal Exchanges purchased.
- **Archon Challenge 4 (Time Merge)**
 - **Old Challenge:** 54321% Temporal Flux bonus
 - **New Challenge:** 432% Temporal Flux bonus
 - **Old Effect:** 20% of time spent as Chaos and Balance in this Reincarnation is added to time spent in this Era.
 - **New Effect:** 10% of time spent as Chaos and Balance in this Reincarnation is added to time spent in this Era.
 - **Effect:** Increase the production of Unique Buildings based on time spent in this Era.
 - **Old Formula:** $(8 * \log_{10}(1 + x)^4)\%$, where x is time spent this Era.
 - **New Formula:** $(9 * \ln(1 + x)^3)\%$, where x is time spent this Era.
- **Archon Challenge 5 (Power Overwhelming)**

- **Old Effect:** The Advanced Heritage that matches your Lineage counts 50% (up from 30%) of its level. All others get 5% (up from 0%) of their respective Lineage level.
- **New Effect:** The Advanced Heritage that matches your Lineage counts 30% (up from 20%) of its level. All others get 3% (up from 0%) of their respective Lineage level.

Djinn

- **Djinn Challenge 1** (Miniature Lamps)
 - **Effect:** While Maelstrom is active, multiplicatively increases assistants based on lowest building tier targeted. Provide a better bonus for lower tiers.
 - **Old Formula:** $(100 * (12 - T))\%$
 - **New Formula:** $(200 * (12 - T))\%$
 - **Effect:** While Fairy Chanting is active, produce Limited Wish casts every second based on Maximum Mana. Increase progressively over its duration.
 - **Old Formula:** $+(0.0005 * (x ^ 0.5) * T * y)$, where x is Maximum Mana, T is Fairy Chanting Tier and y is Fairy Chanting runtime.
 - **New Formula:** $+(0.0025 * (x ^ 0.25) * T * y)$, where x is Maximum Mana, T is Fairy Chanting Tier and y is Fairy Chanting runtime.
- **Djinn Challenge 2** (Ifrit Ignition)
 - **Old Effect:** Limited Wish casts count more based on Hellfire Blast casts in this Era.
 - **New Effect:** Increase Maximum Mana based on Trophies unlocked.
 - **Formula:** $+(0.8 * x ^ 0.8)$, where x is Trophies unlocked.
 - **Old Effect:** Each time you cast an Evil spell, you gain additional casts based on Trophies unlocked.
 - **New Effect:** Each time you cast an Evil or a Chaos spell, you gain additional casts based on Trophies unlocked.
 - **Formula:** $+(0.35 * x ^ 0.7)$, where x is Trophies unlocked.
- **Djinn Challenge 3** (Identity Shaper)
 - **Old Challenge:** Have at least 2 B (2e9) base assistants within 5 minutes of a new game.
 - **New Challenge:** Have at least 3e12 base assistants within 5 minutes of a new game.
- **Djinn Challenge 5** (Altar of Wishes)
 - **Effect:** Multiplicatively increases one of your assets based on the alignments tied to your Faction spells.
 - **Old Formula:** $(50 ^ (1 + 0.25 * x))\%$, where x is spells of a given alignment.
 - **New Formula:** $(45 ^ (1 + 0.25 * x))\%$, where x is spells of a given alignment.

Makers

- **Makers Challenge 1** (Seed of Life)
 - **New Additional Effect:** While offline, increase Elven Luck stat based on Elven Luck chance.
 - **Formula:** $+(x * y)$, where x is autoclick's Elven Luck chance and y is time spent offline.
- **Makers Challenge 2** (Artificial Currency)
 - **Old Challenge:** Find 1e47 (100 Qad) Faction Coins in this Era with a minimum of 50 Excavation Resets in this Reincarnation.
 - **New Challenge:** Find 1e40 (10 Dd) Faction Coins in this Era with a minimum of 3 Excavation Resets in this Reincarnation.
- **Makers Challenge 3** (Pillars of Creation)
 - **Old Challenge:** Have at least 1e9 (1 B) Maximum Mana and build at least 25,000 of each building within 5 minutes of a new Era.
 - **New Challenge:** Have at least 1.2e13 (12 T) Maximum Mana and build at least 30,000 of each building within 5 minutes of a new Era.
 - **Old Effect:** Assistants and Maximum Mana Infinite Spiral effects are also multiplied by Mana Regeneration.
 - **New Effect:** Assistants Infinite Spiral effect is also multiplied by Mana Regeneration.
 - **Effect:** Lineage levels count double for your base lineage effect and the bonus of all Advanced Heritages are doubled.
 - **New Effect:** Lineage levels count 50% more for your base lineage effect and increase the bonus of all Advanced Heritages by 50%.
- **Makers Challenge 5** (Greatest Invention)
 - **Old Challenge:** Have at least 1 T (1e12) assistants, 1 B (1e9) Maximum Mana and 20 Sx (2e22) Faction Coin find chance within 8 minutes of a new game.
 - **New Challenge:** Have at least 1 T (1e12) assistants, 100 M (1e8) Maximum Mana and 200 Qi (2e20) Faction Coin find chance within 8 minutes of a new game.
 - **Old Formula:** $((0.3 * \log_{10}(1 + a) + \log_{10}(1 + b) + \log_{10}(1 + c) + 3 * \log_{10}(1 + d)) ^ 1.5)\%$, a is Factions Coins (this Era), b is Mana produced (this Era), c is spells cast (this Reincarnation), d is clicks made (this Reincarnation)
 - **New Formula:** $(0.4 * (0.3 * \ln(1 + a) + \ln(1 + b) + \ln(1 + c) + 4 * \ln(1 + d)) ^ 1.4)\%$, a is Factions Coins (this Era), b is Mana produced (this Era), c is spells cast (this Reincarnation), d is clicks made (this Reincarnation)
- **Maker Challenge Reward** (Gaia's Cradle)
 - **Old Effect:** All Infinite Spiral effects scale 15% faster.
 - **New Effect:** All Infinite Spiral effects scale 12% faster.

Mercenary

- **Mercenary Challenge 1** (Unlimited Knowledge)
 - **Old Requirement:** 50,000 Research Budget spent.

- **New Requirement:** 20,000 Research Budget spent.
- **Old Challenge:** Have at least 1e25 (10 Sx) Mana Regeneration without using any non-Order upgrade or effect except Challenges and Royal Exchanges.
- **New Challenge:** Have at least 1e20 (100 Qi) Mana Regeneration without using any non-Order upgrade or effect except Challenges and Royal Exchanges.
- **Old Effect:** Gain all Faction Bloodlines simultaneously.
- **New Effect:** Gain the effects of the Base, Prestige and Astral bloodlines of your current alignment.
- **Mercenary Challenge 2** (The Source of Magic)
 - **Old Challenge:** 100 active spells within 5 minutes of a new Era.
 - **New Challenge:** 65 active spells within 5 minutes of a new Era.
- **Mercenary Challenge 3** (Men of the World)
 - **Old Effect:** Gain all the faction sets simultaneously.
 - **New Effect:** Gain the Base and Prestige Artifact Sets of your current alignment.
- **Mercenary Challenge 4** (Return Of The King)
 - **Old Challenge:** Find 1e60 (1 Nod) Faction Coins within 5 minutes of a new Era while having exactly one assistant.
 - **New Challenge:** Find 1e40 (10 Dd) Faction Coins within 10 minutes of a new Era while having exactly one assistant.
- **Mercenary Challenge 5** (The Art of War)
 - **Old Requirement:** 18,000 Royal Exchanges purchased.
 - **New Requirement:** 15,000 Royal Exchanges purchased.
 - **Old Challenge:** Build at least 600,000 buildings without using any researches.
 - **New Challenge:** Build at least 500,000 buildings without using any researches.
- **Mercenary Challenge Reward** (Warcry)
 - **Good Warcry:**
 - **Old Effect:** Call to Arms gain 1 additional Tier per Ascension.
 - **New Effect:** Call to Arms gain 1 Tier.
 - **Order Warcry:**
 - **Old Effect:** Increase all spell durations.
 - **New Effect:** Autoclicks additional times per second and increase all spell durations by 500%.
 - **Formula:** $+(1.25 * \ln(1 + y) ^ 1.25)$, where y is Call to Arms bonus.

Unique Buildings

- **Training Ground**
 - **Name:** Renamed from Elven Training Ground to Training Ground.
- **Heaven's Domain**
 - **Old Effect:** Increase the production of Heaven's Gates based on spells affecting it.
 - **New Effect:** Increase Heaven's Gate production based on Mana Regeneration.
 - **Formula:** $(7 * x ^ 0.7)\%$, where x is Mana Regeneration.
- **Goblin Bank**
 - **Effect:** Increase the base production of Witch Conclaves based on your current amount of Coins.
 - **Old Formula:** $(\log_{10}(1 + x) ^ (3.1 / (1.1 + 0.1 * A)))\%$ where x is your current Coins and A is your current Ascension.
 - **New Formula:** $(2 * \ln(1 + x) ^ (3 / (1.1 + 0.1 * A)))\%$ where x is your current Coins and A is your current Ascension.
- **Undercity**
 - **Effect:** Increase the base production of Necropolises based on time spent in this Era.
 - **Old Formula:** $(12 * (2.5 * x) ^ 0.75)\%$, where x is time spent this Era.
 - **New Formula:** $(80 + 80 * x ^ 0.8)\%$, where x is time spent this Era.
- **Infernal Realm**
 - **Old Effect:** Increase the production of Infernal Realms by 100% per Trophy unlocked.
 - **New Effect:** Increase the production of Infernal Realms by 40% per Trophy unlocked.
- **Olympian Hall**
 - **Effect:** Increase the production of Halls of Legends based on the Royal Exchanges purchased.
 - **Old Formula:** $(0.9 * x ^ 0.9)\%$, where x is Royal Exchanges purchased.
 - **New Formula:** $(6 * x ^ 1.2)\%$, where x is Royal Exchange Purchased.
- **Stonehenge**
 - **Name:** Renamed from Stonehenge Circle to Stonehenge.
- **Sunken City**
 - **Effect:** Increase the production of Labyrinths based on your longest Era this Reincarnation.
 - **Old Formula:** $(75 * (x / 3600) ^ 0.9)\%$, where x is longest Era this Reincarnation.
 - **New Formula:** $(75 + 7.5 * x ^ 0.75)\%$, where x is longest Era this Reincarnation.
- **Spider Sanctuary**
 - **Effect:** Increase the production of Dark Temples based on time spent offline in this Reincarnation.
 - **Old Formula:** $(32 * x ^ 0.8)\%$, where x is time spent offline this Reincarnation.
 - **New Formula:** $(45 * x ^ 0.9)\%$, where x is time spent offline this Reincarnation.
- **Wyrms Den**
 - **Effect:** Increase the production of Iron Strongholds based on Faction Coins found.
 - **Old Formula:** $(0.065 * (\ln(1 + (x / 2) + y)) ^ 3.65)\%$, where x is Faction Coins found this Era and y is Faction Coins found this Reincarnation.
 - **New Formula:** $(0.25 * (\ln(1 + x) ^ 5)\%$, where x is Faction Coins found this Era.

- **Mercenary Camp**
 - **Effect:** Increase the production of Knights' Jousts based on Non-Unique Buildings built.
 - **Old Formula:** $(1.25 * (1 + x) ^ 1.05)\%$, where x is Non-Unique Buildings built.
 - **New Formula:** $(1.25 * (1 + x) ^ 1.25)\%$, where x is Non-Unique Buildings built.
- **Tyrant Garrison**
 - **Effect:** Increase the production of Evil Fortresses based on Offline production.
 - **Old Formula:** $((\log_{10}(1 + x) ^ 3)\%$, where x is Offline production.
 - **New Formula:** $((50 + 3.5 * x ^ 0.75)\%$, where x is Offline production.
- **Freemason's Hall**
 - **Effect:** Increase the production of Inns based on the highest amount of assistants owned in this Reincarnation.
 - **Old Formula:** $(20 + 20 * x ^ 0.8)\%$, where x is the highest amount of assistants owned this Reincarnation.
 - **New Formula:** $(90 + 30 * x ^ 0.9)\%$, where x is the highest amount of assistants owned this Reincarnation.
- **Swarming Tower**
 - **Old Unlock Requirement:** 200,000 assistants owned.
 - **New Unlock Requirement:** 1,000,000 assistants owned.
 - **Effect:** Increase the production of Wizard Towers based on active spells.
 - **Old Formula:** $(0.5 * x ^ 2.5)\%$, where x is active spells.
 - **New Formula:** $(2.5 * x ^ 2.5)\%$, where x is active spells.
- **Arboreal City**
 - **Old Unlock Requirement:** 1e23 (100 Sx) Elven Coins found.
 - **New Unlock Requirement:** 1e20 (100 Qi) Elven Coins found.
- **Holy Site**
 - **Old Unlock Requirement:** 3e6 (3 M) Mana Regeneration.
 - **New Unlock Requirement:** 1e6 (1 M) Mana Regeneration.
 - **Effect:** Increase the production of Cathedrals based on time spent as Good in this Reincarnation.
 - **Old Formula:** $(x ^ 0.85)\%$, where x is time spent as Good this Reincarnation.
 - **New Formula:** $(1.8 * x ^ 0.9)\%$, where x is time spent as Good this Reincarnation.
- **Slave Market**
 - **Old Unlock Requirement:** 30,000 Neutral buildings built.
 - **New Unlock Requirement:** 35,000 Neutral buildings built.
- **Flesh Workshop**
 - **Old Unlock Requirement:** 500,000% Offline production.
 - **New Unlock Requirement:** 2,000% Offline production.
- **Ziggurat**
 - **Effect:** Increase the production of Ancient Pyramids based on total Lineage levels.
 - **Old Formula:** $(x ^ 1.1)\%$, where x is total Lineage levels.
 - **New Formula:** $(x ^ 1.2)\%$, where x is total Lineage levels.
- **Forbidden Library**
 - **Effect:** Increase the production of Monasteries based on spells cast in this Era.
 - **Old Formula:** $(18 * (\ln(1 + x) / \ln(2 + (x \% 10))) ^ 1.8)\%$, where x is spells cast this Era.
 - **New Formula:** $(30 * (\ln(1 + x) / \ln(2 + (x \% 10))) ^ 3)\%$, where x is spells cast this Era.
- **High Bastion**
 - **Old Unlock Requirement:** 5 Excavation Resets made this Era.
 - **New Unlock Requirement:** 3 Excavation Resets made this Era.
 - **Effect:** Increase the production of Royal Castles based on clicks made in this Reincarnation.
 - **Old Formula:** $(0.5 * x ^ 0.5)\%$, where x is clicks this Reincarnation.
 - **New Formula:** $(5 * x ^ 0.5)\%$, where x is clicks this Reincarnation.
- **Dragon's Pasture**
 - Requirement changed from 42 to 25 active spells
 - **Old Unlock Requirement:** 42 active spells.
 - **New Unlock Requirement:** 25 active spells.
 - **Effect:** Increase the production of Farms based on Maximum Mana.
 - **Old Formula:** $(0.63 * x ^ 0.63)\%$, where x is Maximum Mana.
 - **New Formula:** $(0.65 * x ^ 0.65)\%$, where x is Maximum Mana.
- **Astral Unique Buildings**
 - **Quest costs increased to 1e165 to 1e177**
 - **Costs increased from 1e168 to 1e180**
 - **Old Unlock Cost:** 1e165 (1 QaQig) Coins.
 - **New Unlock Cost:** 1e177 (1 OcQig) Coins.
 - **Old Cost:** 1e168 (1 QiQig) Coins.
 - **New Cost:** 1e180 (1 NoQig) Coins.
- **Pavilion**
 - **Old Unlock Requirement:** 5 days of Chaos spells activity time this Era combined.
 - **New Unlock Requirement:** 4 days of Chaos spells activity time this Era combined.
 - **Effect:** Increase The production of Slave Pens/Warrior Barracks/Deep Mines (based on your alignment) based on spells cast this Reincarnation
 - **Old Formula:** $(10 * x ^ 0.5)\%$, where x is spells cast this Reincarnation.

- **New Formula:** $(12 * x ^ 0.6)\%$, where x is spells cast this Reincarnation.

Researches

- **Magician, Artisan, Demigod, Businessman, Apothecary, Warlord** (Researches Secret Trophy)
 - **Old Requirement:** 10 Researches unlocked in the corresponding Facility.
 - **New Requirement:** 15 Researches unlocked in the corresponding Facility.
 - **Effect:** Gain 1 research slot for the corresponding Facility.

Spellcraft

- **S1** (Enchanting)
 - **Effect:** Increase the production of Enchanted Fields (Farms) based on mana produced in this Era.
 - **Old Formula:** $(0.75 * x ^ 0.75)\%$, where x is mana produced this Era.
 - **New Formula:** $(1.2 * x ^ 0.8)\%$, where x is mana produced this Era.
- **S10** (Channeling)
 - **Old Effect:** Increase the production of all other buildings by 110% per Heaven's Domain (Heaven's Gate) built.
 - **New Effect:** Increase the production of all other buildings by 160% per Heaven's Domain built.
- **S30** (Vacuumancy)
 - **Effect:** Increase Maximum Mana and Mana Regeneration based on time spent in this Era.
 - **Old Maximum Mana Formula:** $+(0.1 * x)$, where x is playtime this Era.
 - **New Maximum Mana Formula:** $+(7 * x ^ 0.7)$, where x is playtime this Era.
 - **Old Mana Regeneration Formula:** $+(0.5 * x ^ 0.5)$, where x is playtime this Era.
 - **New Mana Regeneration Formula:** $+(0.4 * x ^ 0.6)$, where x is playtime this Era.
- **S105** (Mysticism)
 - **Effect:** Increase Mana Regeneration based on Research Points.
 - **Old Formula:** $+(x ^ 0.5)$, where x is Research Points.
 - **New Formula:** $+(2.5 * x ^ 0.5)$, where x is Research Points.
- **S135** (Augmentation)
 - **Old Requirement:** 4,000 Unique Buildings.
 - **New Requirement:** 3,000 Unique Buildings.
- **S150** (Pyromancy)
 - **Effect:** Increase the production of the two highest building tiers based on Mana Regeneration.
 - **Old Formula:** $(8 * x ^ 0.8)\%$, where x is Mana Regeneration.
 - **New Formula:** $(10 * x ^ 0.6)\%$, where x is Mana Regeneration.
- **S175** (Empowered Luck)
 - **Old Effect:** Increase production of buildings by 36,000% for 20 seconds each time you trigger Elven Luck and increase the chance to trigger it by +24%.
 - **New Effect:** Increase the production of all buildings based on clicks made in this Era for 20 seconds each time you trigger Elven Luck. Increase Elven Luck chance by +24% for autoclicks only.
 - **Note:** Also increase Elven Luck chance by +1% for manual clicks.
 - **Formula:** $(5000 * x ^ 0.25)\%$, where x is clicks made this Era.
- **S180** (Incantation)
 - **Old Effect:** Increase Mana Regeneration based on assistants owned.
 - **New Effect:** Increase the production of all buildings based on Mana Regeneration.
 - **Formula:** $(50 + 3 * x ^ 0.7)\%$, where x is Mana Regeneration.
- **S215** (Projection)
 - **Old Requirement:** 300 Spiritual Surge casts this Reincarnation.
 - **New Requirement:** 200 Spiritual Surge casts this Reincarnation.
- **S251** (Assimilation)
 - **Effect:** Increase the production of Sunken Cities (Labyrinths) based on time spent as factions other than Faceless.
 - **Old Formula:** $(0.3 * x ^ 0.7)\%$, where x is time spent as non-Faceless this Reincarnation.
 - **New Formula:** $(80 + 0.8 * x ^ 0.8)\%$, where x is time spent as non-Faceless this Reincarnation.
- **S270** (Runecarving)
 - **Old Requirement:** 500,000 clicks made this Era.
 - **New Requirement:** 20,000 clicks made this Era.
- **S300** (ChainLightning)
 - **Old Requirement:** 25 Brainwave casts this Reincarnation.
 - **New Requirement:** 8 Brainwave casts this Reincarnation.
 - **Effect:** While Lightning Strike is active, increase the production of all non-target buildings based on Lightning Strike activity time in this Era.
 - **Old Formula:** $(250 * (x / 20) ^ 0.9)\%$, where x is Lightning Strike activity time this Era.
 - **New Formula:** $(25 * x ^ 0.9)\%$, where x is Lightning Strike activity time this Era.
 - **Removed Effect:** No longer fix Lightning Strike duration.
 - **Note:** A fixed duration cannot be increased, nor can the spell with a fixed duration be reverse autocasted.
- **S305** (Mesmerization)
 - **Effect:** Increase the production of all buildings by a fraction of your Offline Production Bonus.
 - **Old Formula:** $(2.5 * \log_{10}(1 + x) ^ 2.5)\%$, where x is your (pre-Ascension) offline production bonus as a multiplier.
 - **New Formula:** $(\ln(1 + x) ^ 2.5)\%$, where x is your (pre-Ascension) offline production bonus as a multiplier.
 - **Note:** No longer treated as an Ascension 1 upgrade for Ascension penalty.

- **S375** (Illusion)
 - **Effect:** Gain assistants progressively over Brainwave's duration.
 - **Old Formula:** $+(1.15 * ((x + y) / 60) ^ 2)$, where x is brainwave runtime and y is brainwave headstart.
 - **New Formula:** $+(1 + 0.25 * (x + y) ^ 1.5)$, where x is brainwave runtime and y is brainwave headstart.
- **S400** (Capacity)
 - **Old Effect:** Increase Maximum Mana based on the highest amount of spells cast in this Reincarnation.
 - **New Effect:** Artifacts and trophies count more based on the highest amount of spells cast this Reincarnation.
 - **New Formula:** $(\ln(1 + x) ^ 1.5)\%$, where x is the highest amount of spells cast this Reincarnation.
- **S435** (Spellbinding)
 - **Old Requirement:** 4 hours of Combo Strike activity time this Era.
 - **New Requirement:** 1 hour of Combo Strike activity time this Era.
 - **Old Effect:** Passively grants the effects from Call to Arms while offline.
 - **New Effect:** Call to Arms counts more buildings based on time spent offline in this Reincarnation.
 - **Formula:** $(100 + 3 * x ^ 0.9)\%$, where x is offline time this Reincarnation.
 - **New Effect:** Also increase offline production based on Combo Strike activity time in this Reincarnation.
 - **Formula:** $(1.2 * x ^ 0.8)\%$, where x is Combo Strike activity time this Reincarnation.
- **S460** (Focus)
 - **Old Effect:** Increase the production of all buildings based on Faction spells cast in this Era.
 - **New Effect:** Increase production bonus from gems based on Faction spells activity time in this Era.
 - **Formula:** $+(1.2 * x ^ 0.6)$, where x is total Faction spells activity time this Era.
- **S500** (Heirlooms)
 - **Old Requirement:** 40 Artifacts found.
 - **New Requirement:** 30 Artifacts found.
- **S1275** (Sequence)
 - **Effect:** Reduces cost scaling for higher Tier spells.
 - **Old Formula:** $-(0.5)$ for all Spells.
 - **New Formula:** $-(0.1)$ for Normal Spells, $-(0.5)$ for Extraordinary Spells.
 - **Note:** Refer to [Spell Tiers](#) for more details.
- **S1450** (Spellstorm)
 - **Old Effect:** Increase the production of Unique buildings based on active spells.
 - **New Effect:** Increase the production of Unique buildings based on the duration of your longest spell.
 - **New Formula:** $(2.5 * x ^ 0.85)\%$, where x is the duration of your longest spell.
- **S1500** (Psionics)
 - **Old Requirement:** 1,000 base assistants.
 - **New Requirement:** 5,000 base assistants.
 - **Old Effect:** Increase the production of Unique Buildings based on assistants owned.
 - **New Effect:** Increase triggered Tax Collections based on assistants owned.
 - **New Formula:** $+(1 + 0.25 * \ln(1 + x) ^ 1.25)$, where x is assistants owned.
- **S2875** (Scholarship)
 - **Old Effect:** Increases the production of Non-Unique Buildings by 5% per Unique building built.
 - **New Effect:** Increases the production of Non-Unique Buildings based on Unique buildings built.
 - **Formula:** $(10 * x ^ 1.05)\%$, where x is Unique Buildings built.
- **S3200** (Manipulation)
 - **Old Effect:** Multiplicatively increase Mana Regeneration by 8% per active spell.
 - **New Effect:** Multiplicatively increase Mana Regeneration by 12% per active spell.
- **S5125** (Spilling)
 - **New Requirement:** 1e9 (1 B) mana produced this Era.
- **S5375** (Invocation)
 - **Effect:** Increase Maximum Mana additively and multiplicatively based on the activity time of your least used spell in this Reincarnation.
 - **Old Multiplicative Formula:** $(6 + 0.6 * x ^ 0.6)\%$, where x is the spell activity time of your least used spell this Reincarnation.
 - **New Multiplicative Formula:** $(5.5 + 0.55 * x ^ 0.55)\%$, where x is the spell activity time of your least used spell this Reincarnation.
- **S5625** (Leylines)
 - **New Requirement:** 1e12 (1 T) assistants owned.
- **S5875** (Mirrors)
 - **New Requirement:** 1e12 (1 T) spells cast this Era.
- **S11125** (Multiplication)
 - **New Requirement:** 1e10 (10 B) Maximum Mana.
- **S11375** (Concentration)
 - **New Requirement:** 1e15 (1 Qa) spells cast this Era.
- **S11625** (Completeness)
 - **New Requirement:** 900 Trophies unlocked.
- **S11875** (Arcane Efficiency)
 - **New Requirement:** 5,000 Unique Buildings built.
- **S12250** (Necrodoomancy)

- **New Requirement:** 8 hours time spent offline this Reincarnation.
 - **Effect:** Reincarnations count more based on time spent as Undead in this Reincarnation.
 - **Old Formula:** $(0.5 * x^{0.5})\%$, where x is time spent as Undead in this Reincarnation.
 - **New Formula:** $(20 + 0.4 * x^{0.4})\%$, where x is time spent as Undead in this Reincarnation.
- **S13125** (Fantasia)
 - **New Requirement:** 1e21 (1 Sx) mana produced this Reincarnation.
 - **Effect:** Multiplicatively increase assistants based on mana produced in this Era.
 - **Old Formula:** $(2 * \ln(1 + x)^2)\%$, where x is mana produced this Era.
 - **New Formula:** $(\ln(1 + x)^2)\%$, where x is mana produced this Era.
- **S13500** (Legerdemain)
 - **New Requirement:** 1e23% (100 Sx) Faction Coin find chance, Fairy Artifact Set purchased.

Craftsmanship

- **C10** (Cultivation)
 - **Old Effect:** Increase the production of Inns and Blacksmiths by 60% per Enchanted Field (Farm) built.
 - **New Effect:** Increase the production of Inns and Blacksmiths by 70% per Enchanted Field built.
- **C25** (Light Condenser)
 - **Effect:** Increase mana regeneration based on the amount of spells cast.
 - **Old Formula:** $+(10 * x^{0.3} / 10)$, where x is spells cast this Era.
 - **New Formula:** $+(20 * \ln(1 + x)^2)$, where x is spells cast this Era.
- **C80** (Apprenticeship)
 - **Old Effect:** Increase the production of Neutral buildings based on of Good and Evil buildings.
 - **New Effect:** Increase the production of all buildings based on Faction Coins found in this Era, giving the best bonus to the lowest.
 - **Formula:** $((7 * \ln(1 + x)^{1.4} * (1.4^{(12 - T))})\%$, where x is your Faction Coins found this Era and T is your building tier.
- **C105** (Woodcraft)
 - **Effect:** Multiplicatively increase Faction Coins find chance based on Unique Buildings built.
 - **Old Formula:** $(1.5 * x^{1.05})\%$, where x is Unique Buildings built.
 - **New Formula:** $(x^{0.5})\%$, where x is Unique Buildings built.
- **C120** (Socketing)
 - **Old Requirement:** 200,000 clicks made this Era.
 - **New Requirement:** 100,000 clicks made this Reincarnation.
 - **Effect:** Increase clicking reward based on Gems owned.
 - **Old Formula:** $(20 * \log_{10}(1 + x))\%$, where x is Gems owned.
 - **New Formula:** $(5 * \ln(1 + x)^{1.5})\%$, where x is Gems owned.
- **C135** (Reinforcing)
 - **Old Requirement:** 250k clicks this Era.
 - **New Requirement:** 100 Elven Lucks triggered this Era.
 - **Old Effect:** Increase the production of all buildings based on clicks made this Reincarnation.
 - **New Effect:** Increase the production of Non-Unique Buildings based on clicks made this Reincarnation.
 - **Formula:** $(40 * x^{0.4})\%$, where x is clicks made this Reincarnation.
- **C150** (Tinkering)
 - **Effect:** Increase the production of all buildings based on Research Points.
 - **Old Formula:** $(125 * x^{0.38})\%$, where x is Research Points.
 - **New Formula:** $(18 * x^{0.6})\%$, where x is Research Points.
- **C175** (Gemcutting)
 - **Effect:** Increase the production bonus from gems based on buildings built.
 - **Old Formula:** $(0.0005 * x)\%$, where x is buildings built.
 - **New Formula:** $(0.25 * x^{0.5})\%$, where x is buildings built.
- **C200** (Journeymen)
 - **Old Effect:** Increase the production of Unique Buildings based on time spent as the faction of those buildings in this Reincarnation.
 - **New Effect:** Increase the production of Unique Buildings based on time spent as the alignments of those buildings' upgrade in this Reincarnation.
 - **Note:** The alignment(s) of the Unique Building **upgrade** is checked, which may differ from the building itself. As an example, the Enchanted Fields upgrade counts as Good despite the building itself being Neutral.
 - **Note:** Refer to [Unique Buildings alignments](#) for more details.
 - **Formula:** $(25 + 1.25 * x^{0.75})\%$, where x is the sum of time spent as the building's alignment(s) this Reincarnation.
- **C225** (Automatons)
 - **Old Effect:** Each Training Grounds counts as 200 buildings for Call to Arms purposes.
 - **New Effect:** Each Training Grounds counts as more buildings for Call to Arms purposes, based on assistants owned.
 - **Formula:** $x(20 * \ln(1 + x)^2)$, where x is assistants owned.
 - **Note:** Additive with other sources. Refer to [Miscellaneous](#) for more details.
- **C250** (Magnetism)
 - **Effect:** Increase Faction Coin find chance based on time spent offline in this Reincarnation.
 - **Old Formula:** $+(7.5 * x^{0.75})$, where x is time spent offline this Reincarnation.

- **New Formula:** $+(9 * x ^ 0.9)$, where x is time spent offline this Reincarnation.
- **C251** (Architecture)
 - **Effect:** Increase the production of Hall of Legends based on buildings built.
 - **Old Formula:** $(0.5 * x ^ 0.8)\%$, where x is buildings built.
 - **New Formula:** $(80 * x ^ 0.8)\%$, where x is buildings built.
- **C300** (Weighting)
 - **Effect:** Also increase the production of every Grand Balance target based on Maximum Mana.
 - **Old Formula:** $10 * (2.15 * \log_{10}(1 + x)) ^ 1.75 ^ y$, where x is Maximum Mana and y is Grand Balance's Tier.
 - **New Formula:** $25 * ((\ln(1 + x) ^ (2.5y)))$, where x is Maximum Mana and y is Grand Balance's Tier.
- **C305** (Golemcraft)
 - **Old Effect:** Gain assistants based on time spent offline this Reincarnation.
 - **New Effect:** Multiplicatively increase assistants based on time spent offline this Reincarnation.
 - **New Formula:** $(0.7 * x ^ 0.7)\%$, where x is time spent offline this Reincarnation.
- **C330** (Overload)
 - **Old Effect:** Increase Mana Regeneration based on Research Points.
 - **New Effect:** Increase Maximum Mana based on Research Points.
 - **Formula:** $+(15 * x ^ 0.75)$, where x is Research Points.
- **C340** (GemDuster)
 - **Old Requirement:** 800 Gems Grinder cast this Reincarnation.
 - **New Requirement:** 200 Gems Grinder cast this Reincarnation.
- **C405** (Metallurgy)
 - **Effect:** Increase the production of Blacksmiths based on Blacksmiths built.
 - **Old Formula:** $(40 * x ^ 0.8)\%$, where x is Blacksmiths built.
 - **New Formula:** $(60 * x ^ 0.8)\%$, where x is Blacksmiths built.
- **C460 effect swapped with D480**
- **C460** (Distribution)
 - **Old Requirement:** 1e6 (1 M) clicks made this Era.
 - **New Requirement:** 500,000 clicks made All-time.
 - **Old Effect:** Increase the production of all buildings based on the difference in time spent among the three alignments. A smaller difference gives a higher bonus.
 - **New Effect:** Multiplicatively increases production from gems based on time spent with alignments different from your current.
 - **Formula:** $(0.4 * x ^ 0.6)\%$, where x is the sum of times spent as other alignments this Reincarnation.
- **C520** (Blacksmithing)
 - **Old Effect:** Increase clicking reward and Faction Coin find chance bonus of Diamond Pickaxe based on Dwarven Forges built.
 - **New Effect:** Increase the production of Unique Buildings based on Artifacts found.
 - **New Formula:** $(x ^ 2)\%$, where x is Artifacts found.
- **C590** (Alloys)
 - **Effect:** Increase clicking reward based on Faction Coin find chance.
 - **Old Formula:** $(0.9 * x ^ 0.9)\%$, where x is Faction Coin find chance.
 - **New Formula:** $(x ^ 0.9)\%$, where x is Faction Coin find chance.
- **C1300** (Scintillation)
 - **Effect:** Increase the production of all buildings based on Maximum Mana and production bonus from Gems.
 - **Old Formula:** $((250 * x ^ 0.5) / y ^ 0.95)\%$, where x is Maximum Mana and y is production bonus from Gems.
 - **New Formula:** $(1.5 * \ln(1 + x) ^ (0.8 * \ln(1 + y) ^ 0.5))\%$, where x is Maximum Mana and y is production bonus from Gems.
 - **Note:** No longer scales inversely with production bonus from Gems.
- **C1325** (Plasmation)
 - **Old Effect:** Gain assistants based on Mana produced in this Era.
 - **New Effect:** Multiplicatively increase assistants based on Mana produced in this Era.
 - **New Formula:** $(1.75 * \ln(1 + x) ^ 1.75)\%$, where x is mana produced this Era.
- **C1500** (Gargantuaness)
 - **Effect:** Increase the production of all buildings based on time spent as Neutral this Reincarnation.
 - **Old Formula:** $(1.5 * (x / 60) ^ 0.7)\%$, where x is time spent as Neutral this Reincarnation.
 - **New Formula:** $(0.75 * x ^ 0.75)\%$, where x is time spent as Neutral this Reincarnation.
- **C3100** (Engineering)
 - **Old Requirement:** 12 days time spent as Mercenary All-time.
 - **New Requirement:** 3 days time spent as Mercenary All-time.
 - **Old Effect:** Increase Maximum Mana based on clicks made in this Reincarnation.
 - **New Effect:** Multiplicatively increase Maximum Mana based on clicks made in this Reincarnation.
 - **Formula:** $(1.5 * x ^ 0.35)\%$, where x is clicks made this Reincarnation.
- **C5125** (Restauration)
 - **New Requirement:** 100 Autoclick Power
 - **Effect:** Increase the production of all buildings based on assistants owned.
 - **Old Formula:** $(0.5 * x ^ 0.25)\%$, where x is assistants owned.
 - **New Formula:** $(0.8 * x ^ 0.2)\%$, where x is assistants owned.

- **C5625** (Discovery)
 - **New Requirement:** 25,000 Excavation Depth
 - **Old Effect:** Trophies and Artifacts count more based on Excavation Made this Era.
 - **New Effect:** Trophies and Artifacts count more based on Excavations depth.
 - **Old Formula:** $(0.25 * (x * (y + 1)) ^ 0.5)\%$, where x is Excavation depth and y is Excavation Resets made this Era.
 - **New Formula:** $(0.5 * x ^ 0.5)\%$, where x is Excavation depth
- **C5875** (Genuineness)
 - **New Requirement:** 70 Active spells
- **C10875** (Masterpiece)
 - **Old Effect:** Multiplicatively increase Faction Coin find chance based on Excavation Resets made in this Reincarnation.
 - **New Effect:** Multiplicatively increase Faction Coin find chance based on Excavation depth.
 - **Formula:** $(0.6 * x ^ 0.6)\%$, where x is Excavation depth.
- **C11125** (Installation)
 - **New Requirement:** 20,000 buildings built.
- **C11375** (Exhibition)
 - **New Requirement:** 2 hours time spent as Evil this Reincarnation.
- **C11625** (Motus Perpetuum)
 - **New Requirement:** 100,000 clicks made this Era.
 - **Old Effect:** Autoclick additional times per second based on clicks made in this Reincarnation.
 - **New Effect:** Multiplicatively increase autoclick power by 100%.
- **C11875** (Plating)
 - **New Requirement:** 100 Autoclick Power.
- **C12250** (Compression)
 - **New Requirement:** 2 days Brainwave duration.
- **C13125** (Pottery)
 - **New Requirement:** 40 active spells, Elven Artifact Set purchased.
- **C13500** (Assembly Line)
 - **New Requirement:** 1e15 (1 Qa) assistants owned, Dwarven Bloodline purchased.

Divine

- **D1** (Blessing)
 - **Effect:** Increase the production of Heaven's Gates based on time spent with at least one active spell in this Reincarnation.
 - **Old Formula:** $(8 * x ^ 0.8)\%$, where x is time spent with at least one spell active.
 - **New Formula:** $(80 + 8 * x ^ 0.8)\%$, where x is time spent with at least one spell active.
- **D10** (Inflame)
 - **Effect:** Increase the production of all other buildings based on Infernal Realms (Hell Portals) built in this Era.
 - **Old Formula:** $(110 * x)\%$, where x is Hell Portals built.
 - **New Formula:** $(160 * x)\%$, where x is Hell Portals built.
- **D25** (Cursing)
 - **Old Requirement:** 5 hours time spent as offline as Undead this Era.
 - **New Requirement:** 1 hour time spent as offline this Reincarnation.
 - **Effect:** Increase the production of all buildings based on offline production.
 - **Old Formula:** $(2.75 * \log_{10}(1 + x) ^ 2.75)\%$, where x is offline production.
 - **New Formula:** $(\ln(1 + x) ^ 2.5)\%$, where x is your offline production.
- **D50** (Hallowing)
 - **Old Effect:** Multiplicatively increase Faction Coins find chance based on Training Grounds (Warrior Barracks) built.
 - **New Effect:** Increase Faction Coins find chance based on Training Grounds (Warrior Barracks) built.
 - **Old Formula:** $(1.5 * x ^ 1.05)\%$, where x is Training Grounds built.
 - **New Formula:** $+(2 * x ^ 1.5)$, where x is Training Grounds built.
- **D135** (Illumination).
 - **Effect:** Increases Mana Regeneration based on Gems owned.
 - **Old Formula:** $+(0.125 * \ln(1 + x))$, where x is Gems owned.
 - **New Formula:** $+(5 + 0.05 * \ln(1 + x) ^ 1.5)$, where x is Gems owned.
- **D150** (Retribution)
 - **Old Effect:** Multiplicatively increase Faction Coin find chance based on Research Points.
 - **New Effect:** Increase Faction Coin find chance additively based on Research Points and multiplicatively by 50%.
 - **Old Formula:** $(x ^ 1.25)\%$, where x is Research Points.
 - **New Formula:** $+(5 * x ^ 0.75)$, where x is Research Points.
- **D175** (Resurrection)
 - **Effect:** Gain assistants based on God's Hands activity time this Reincarnation.
 - **Old Formula:** $+(1.5 * x ^ 0.75)$, where x is God's Hands activity time this Reincarnation.
 - **New Formula:** $+(2.5 * x ^ 0.75)$, where x is God's Hands activity time this Reincarnation.
- **D205** (Communion)
 - **Old Requirement:** 777 Holy Light casts this Reincarnation.
 - **New Requirement:** 333 Holy Light casts this Reincarnation.

- **Old Effect:** Increase Holy Light duration by 300 seconds.
 - **New Effect:** Increase Holy Light duration based on time spent in this Era.
 - **Formula:** $+(2 * x ^ 0.7)$, where x is time spent this Era.
 - **New Additional Effect:** Multiplicatively increase autoclick power by 10%.
- **D225** (Weather Control)
 - **Effect:** Increase the production of Enchanted Fields (Farms) based on Maximum Mana.
 - **Old Formula:** $(2.25 * x ^ 0.8)\%$, where x is Maximum Mana.
 - **New Formula:** $(2.5 * x ^ 0.8)\%$, where x is Maximum Mana.
- **D245** (Sanctification)
 - **Old Requirement:** 500 Spiritual Surge casts this Reincarnation.
 - **New Requirement:** 3 hours Spiritual Surge activity time All-time.
- **D250** (Demonology)
 - **Old Effect:** Gain assistants based on Faction Coins found in this Era.
 - **New Effect:** Multiplicatively increase assistants based on Faction Coins found in this Era.
 - **Formula:** $(\ln(1 + x) ^ 1.5)\%$, where x is Faction Coins found this Era. (Unchanged)
- **D260** (Mutation)
 - **Effect:** Increase the production of all other buildings based on Sunken Cities (Labyrinths) built.
 - **Old Formula:** $(95 * x)\%$, where x is Sunken Cities built.
 - **New Formula:** $(160 * x)\%$, where x is Sunken Cities built.
- **D350** (Descent)
 - **Old Effect:** Gain assistants based on Olympian Halls (Hall of Legends) built.
 - **New Effect:** Multiplicatively increase assistants based on the amount of Olympian Halls built.
 - **Old Formula:** $+(x ^ 0.5)$, where x is Olympian Halls built.
 - **New Formula:** $(0.2 * x ^ 0.8)\%$, where x is Olympian Halls built.
- **D400** (Miracle)
 - **Old Effect:** Increase the production of a random building by 25,000[^]. Target changes every 2 minutes. While offline, increase the production of all buildings by 7,500%.
 - **New Effect:** Increase the Production of a random building based on mana produced in this Era. Target changes every 2 minutes. While offline, increase the production of all buildings by 12,000%.
 - **Formula:** $(2.75 * \ln(1 + x) ^ 2.75)\%$, where x is mana produced this Era.
- **D435** (Devotion)
 - **Old Requirement:** 4 hours Diamond Pickaxe activity time this Era.
 - **New Requirement:** 1 hour Diamond Pickaxe activity time this Era.
 - **Old Effect:** Increase the production of Good buildings based on spells cast in this Era.
 - **New Effect:** Reduce Holy Light cost by 50% and multiplicatively increase production bonus from Gems based on Holy Light duration.
 - **Formula:** $(6 + 0.6 * x ^ 0.6)\%$, where x is Holy Light duration.
- **D480 effect swapped with C460**
- **D480** (Mercy)
 - **Old Requirement:** 12 hours spent as each alignment (Good, Evil & Neutral) this Reincarnation (36 hours total).
 - **New Requirement:** 30 minutes spent as each alignment this Reincarnation.
 - **Old Effect:** Increase the production of Non-Unique Buildings based on clicks made in this Era.
 - **New Effect:** Increase the production of Non-Unique Buildings based on time spent as your least used alignment in this Reincarnation.
 - **New Formula:** $(80 + 40 * x ^ 0.8)\%$, where x is time spent as your least used alignment this Reincarnation.
- **D525** (Purity)
 - **Old Requirement:** 1.5 days spent as Good this Reincarnation.
 - **New Requirement:** 1.5 hours spent as Good this Reincarnation.
 - **Old Effect:** Increase Holy Light bonus based on Faction spells cast in this Era.
 - **New Effect:** While Holy Light is active, increase the production of all buildings based on Faction spells cast in this Era.
 - **Formula:** $(15 * x ^ 0.75)\%$, where x is Faction spells cast this Era.
- **D560** (Ritualism)
 - **Effect:** Increase Mana Regeneration based on Trophies unlocked.
 - **Old Formula:** $+(0.06 * x)$, where x is Trophies unlocked.
 - **New Formula:** $+(1.5 * x ^ 0.85)$, where x is Trophies unlocked.
- **D590** (Dispelling)
 - **Old Effect:** Increase the production of Unique buildings based on Mana Regeneration.
 - **New Effect:** Multiplicatively increase Royal Exchange bonus based on Mana Regeneration.
 - **Formula:** $(2 * \ln(1 + x) ^ 2)\%$, where x is Mana Regeneration.
- **D1125** (Oblation)
 - **Effect:** Increase the production of Wyrms' Dens (Iron Strongholds) based on Faction Coin find chance.
 - **Old Formula:** $(1.55 * x ^ 0.55)\%$, where x is Faction Coin find chance.
 - **New Formula:** $(1.6 * x ^ 0.6)\%$, where x is Faction Coin find chance.
- **D1275** (Solemnity)
 - **Old Effect:** Increase the production of all buildings by 0.3% per building of the same tier.
 - **New Effect:** Increase the production of Unique Buildings by 0.3% and Non-Unique Buildings by 3% per building of the same tier.

- **D1375** (Soulrending)
 - **Old Requirement:** 7 days spent as Good All-time.
 - **New Requirement:** 12 hours spent as Good All-time.
 - **Old Effect:** Ascensions count 50% more for Spiritual Surge.
 - **New Effect:** Reincarnations count 50% more.
- **D2775** (Intervention)
 - **Effect:** Increases the production of Unique Building based on time spent as Mercenary All-time.
 - **Old Formula:** $(10 * x^{0.7})\%$, where x is time spent as Mercenary All-time.
 - **New Formula:** $(80 + 2 * x^{0.8})\%$, where x is time spent as Mercenary All-time.
- **D3350** (Vampirism)
 - **Effect:** Increase assistants additively and multiplicatively based on Offline production.
 - **Old Additive Formula:** $(3.25 * \log_{10}(1 + x)^{2.25})$, where x is Offline production.
 - **New Additive Formula:** $(2.5 * \ln(1 + x)^{2.5})$, where x is Offline production.
 - **Old Multiplicative Formula:** $(0.05 * \log_{10}(1 + x)^2)$, where x is Offline production.
 - **New Multiplicative Formula:** $(0.2 * \ln(1 + x)^2)$, where x is Offline production.
- **D5125** (Selection)
 - **New Requirement:** 1e18% (1 Qi) Faction Coin find chance.
- **D5625** (Prophecy)
 - **New Requirement:** 30 minutes time spent as your least used faction.
- **D5875** (Birthright)
 - **New Requirement:** 10,000 Royal Exchanges purchased.
- **D10875** (Scriptures)
 - **Effect:** Increase the duration of all spells based on time spent as their requirement (Faction or Alignment) in this Reincarnation.
 - **Old Formula:** $(0.7 * x^{0.7})\%$, where x is time spent as the spell's requirement this Reincarnation.
 - **New Formula:** $(0.3 * x^{0.7})\%$, where x is time spent as the spell's requirement this Reincarnation.
- **D11125** (Viriditas)
 - **New Requirement:** 100 Artifacts found.
- **D11375** (Rigor)
 - **New Requirement:** 4 hours Spiritual Surge activity time this Reincarnation.
 - **Old Effect:** Reincarnations count 100% more.
 - **New Effect:** Reincarnations count 50% more.
- **D11625** (Compassion)
 - **New Requirement:** 2 hours time spent as Chaos this Reincarnation.
- **D11875** (Virtues)
 - **New Requirement:** 1e12 (1 T) Tax Collection casts this Era, Titan Bloodline purchased.
- **D12250** (Enochian)
 - **New Requirement:** 2 hours time spent this Era, Angel Bloodline purchased.
- **D13125** (Asceticism)
 - **New Requirement:** 5 Active Dragon's Breath Colors.
- **D13500** (Afterlife)
 - **New Requirement:** 1e23 (100 Sx) Mana Regeneration, Druid Bloodline purchased.

Economics

- **E1** (Coinage)
 - **Effect:** Increase the production of Goblin Banks (Witch Conclaves) based on buildings built.
 - **Old Formula:** $(0.85 * x^{0.85})\%$, where x is buildings built.
 - **New Formula:** $(2 * x^{0.8})\%$, where x is buildings built.
- **E10** (Recycling)
 - **Effect:** Increase the production of all other buildings based on Undercities (Necropolises) built in this Era.
 - **Old Formula:** $(95 * x)\%$, where x is Undercities built.
 - **New Formula:** $(140 * x)\%$, where x is Undercities built.
- **E25** (Commerce)
 - **Effect:** Gain assistants based on Royal Exchanges purchased.
 - **Old Formula:** $+(1 + 6 * x)^{0.5} - 1$, where x is Royal Exchanges purchased.
 - **New Formula:** $+(4 * x^{0.7})$, where x is Royal Exchanges purchased.
- **E30** (Diplomacy)
 - **Effect:** Increases Faction Coin find chance and Royal Exchange bonus based on time spent in this Era.
 - **Old Faction Coin Formula:** $+(1.5 * (x / 60)^{1.05})$, where x is time spent this Era.
 - **New Faction Coin Formula:** $+(3 * x^{0.7})$, where x is time spent this Era.
 - **Old Exchange Formula:** $+(x / 60)^{0.6}$, where x is time spent this Era.
 - **New Exchange Formula:** $+(0.3 * x^{0.7})$, where x is time spent this Era.
- **E135** (Bribing)
 - **Old Requirement:** 28,000 buildings built.
 - **New Requirement:** 24,000 buildings built.
- **E150 and E400 swapped**
- **E150** (Conversion)

- **Effect:** Increase production bonus from Gems based on Royal Exchange bonus.
 - **Formula:** $+(2.5 * x^{0.5})$, where x is Royal Exchange bonus. (Unchanged)
- **E230** (Coercion)
 - **Effect:** Trophies count more based on time spent as Evil this Reincarnation.
 - **Old Formula:** $(0.25 * x^{0.5})\%$, where x is time spent as Evil this Reincarnation.
 - **New Formula:** $(25 + 0.25 * x^{0.5})\%$, where x is time spent as Evil this Reincarnation.
- **E260** (Sifting)
 - **Old Effect:** Increase the production of all other buildings by 100% per Stonehenge (Stone Pillars) built.
 - **New Effect:** Increase the production of all other buildings by 200% per Stonehenge built.
- **E275** (Offering)
 - **Effect:** Increase Mana Regeneration based on Royal Exchange bonus.
 - **Old Formula:** $+(x^{0.95})$, where x is Royal Exchange bonus.
 - **New Formula:** $+(7 * x^{0.7})$, where x is Royal Exchange bonus.
- **E400** (Investment)
 - **Old Effect:** Increase the production of all buildings based on your amount of Coins.
 - **New Effect:** Research points count more based on clicks made in this Era.
 - **Formula:** $(35 + x^{0.35})\%$, where x is clicks made this Era.
- **E460** (Inflation)
 - **Effect:** Increase Royal Exchange bonus based on Faction Coins found in this Era.
 - **Old Formula:** $+(3.5 * \log_{10}(1 + x))$, where x is Faction Coins found this Era.
 - **New Formula:** $+(2 * \ln(1 + x)^2)$, where x is Faction Coins found this Era.
- **E480 effect swapped with A545**
- **E480** (Undercutting)
 - **Effect:** Multiplicatively increase Mana Regeneration based on Gems owned.
 - **Old Formula:** $(0.5 * \log_{10}(1 + x))\%$, where x is Gems owned.
 - **New Formula:** $(0.5 * \ln(1 + x)^{1.35})\%$, where x is Gems owned.
- **E495** (Jewellery)
 - **Effect:** Increase production bonus from Gems based on Spider Sanctuaries (Dark Temples) built.
 - **Old Formula:** $+(0.06 * x^{0.8})$, where x is Spider Sanctuaries built.
 - **New Formula:** $+(4 * x^{0.8})$, where x is Spider Sanctuaries built.
- **E590** (Slavery)
 - **Old Effect:** Gain assistants based on Non-Unique Buildings built.
 - **New Effect:** Increase the production of assistants based on Non-Unique Buildings built.
 - **Formula:** $(0.4 * x^{0.8})\%$, where x is the amount of Non-Unique Buildings you own.
- **E1225** (Hoarding)
 - **Old Effect:** Remove 1 Ascension Penalty from Royal Exchange
 - **New Effect:** Increase the Ascension multiplier for Royal Market bonus by 0.7.
 - **Note:** Refer to [Royal Exchange](#) for more details.
- **E1425** (Rarity)
 - **Old Requirement:** 5 days time spent each as Titan, Druid and Faceless All-time (6 hours total).
 - **New Requirement:** 2 hours time spent each as Titan, Druid and Faceless All-time.
- **E3250** (Hirelings)
 - **Old Effect:** Gain assistants based on your current amount of Coins.
 - **New Effect:** Gain assistants based on Faction Coins found this Era.
 - **Formula:** $+(5 * \ln(x)^{2.5})$, where x is Faction Coins found this Era
- **E5125** (Decentralization)
 - **New Requirement:** 500,000 buildings built.
- **E5625** (Loan Sharking)
 - **New Requirement:** 5e150 (5 Noqag) Coins
 - **Effect:** Tax Collection is worth more seconds based on your current amount of Coins.
 - **Old Formula:** $+(\log_{10}(1 + x)^{1.5})$, where x is Coins amount.
 - **New Formula:** $+(0.5 * \ln(1 + x)^{1.25})$, where x is Coins amount.
- **E5875** (Prosperity)
 - **New Requirement:** 30 minutes least used spell activity time.
- **E11125** (Gray Friday)
 - **New Requirement:** 20,000 Neutral buildings built.
- **E11375** (Heist)
 - **New Requirement:** 1e18 (1 Qi) assistants owned.
- **E11625** (Surplus)
 - **New Requirement:** Have more Gems owned than Reincarnation requirement.
- **E11875** (Overworking)
 - **New Requirement:** 3,500 Slave Markets (Slave Pens) built.
 - **Old Effect:** Goblin's Greed casts additional Tax Collection per second based on assistants owned.
 - **New Effect:** While Goblin's Greed is active, increase triggered Tax Collections based on assistants owned.
 - **Old Formula:** $+(1.5 * x^{0.5})$, where x is assistants owned.
 - **New Formula:** $+(1.5 * \ln(1 + x)^{1.5})$, where x is assistants owned.
- **E12250** (Oilery)

- **New Requirement:** 30 minutes least used spell activity time.
- **E13125** (Discount)
 - **New Requirement:** Reduce Tax Collection cost by 200 mana (have Tax Collection cost 800 or less mana).
 - **Old Effect:** Reduce Royal Exchange, Excavation and Building cost multipliers. Reduce all spells cost by 50%.
 - **New Effect:** Reduce Royal Exchange, Excavation and Building cost multipliers.
- **E13500** (Recession)
 - **New Requirement:** 1000 Total Lineage levels
 - **Effect:** Gain all Lineage base effects that match your alignments, up to a maximum of level 25.
 - **Bug Fix:** No longer reduce the level of Lineages you didn't purchase to 25 while using this research.

Alchemy

- **A1** (Plague)
 - **Old Effect:** Increase the production of Undercities (Necropolises) by 20% per assistant owned.
 - **New Effect:** Increase the production of Undercities based on assistants owned.
 - **Formula:** $(200 * x^{0.9})\%$, where x is assistant owned.
- **A10** (Transmutation)
 - **Old Effect:** Increase the production of all other buildings by 85% per Goblin Bank (Witch Conclave) built.
 - **New Effect:** Increase the production of all other buildings by 90% per Goblin Bank built.
- **A25** (Deflagration)
 - **Old Requirement:** 666 Hellfire Blast casts this Reincarnation.
 - **New Requirement:** 6,666 seconds (1 hours 51 minutes and 6 seconds) Hellfire Blast activity time this Reincarnation.
 - **Old Effect:** Reduces Hellfire Blast duration by 16 seconds, reduces its mana cost by 200 and increases its bonus by 800%.
 - **New Effect:** Fix Hellfire Blast duration to 4 seconds, reduces its mana cost by 400 and increases its bonus by 1,600%.
 - **Note:** A fixed duration cannot be increased, nor can the spell with a fixed duration be reverse autocasted.
- **A30** (Delayed Reaction)
 - **Old Requirement:** 750 Fairy Chanting casts this Reincarnation.
 - **New Requirement:** 5,000 seconds (1 hours 23 minutes and 20 seconds) Fairy Chanting activity time this Reincarnation.
 - **Effect:** Increases Fairy Chanting duration based on Enchanted Fields (Farms), Inns and Blacksmiths built.
 - **Old Formula:** $+(0.00125 * x^{0.8})$, where x is Enchanted Fields, Inns and Blacksmiths built.
 - **New Formula:** $+(0.2 * x^{0.8})$, where x is Enchanted Fields, Inns and Blacksmiths built.
- **A50** (Gilding)
 - **Old Effect:** Increase Mana Regeneration based on Heaven's Domains (Heaven's Gates) built.
 - **New Effect:** While your Mana Regeneration is higher than your Maximum Mana, increase the production of Heavens' Domains based on Mana Regeneration and Maximum Mana.
 - **Formula:** $(90 * (x / y)^{0.9})\%$, where x is Mana Regeneration and y is Maximum Mana.
- **A120** (Vivification)
 - **Effect:** Gain assistants based on Maximum Mana.
 - **Old Formula:** $+(x / 15)^{0.825}$, where x is Maximum Mana.
 - **New Formula:** $+(x^{0.5})$, where x is Maximum Mana.
- **A135** (Decay)
 - **Old Requirement:** 1 day time spent this Reincarnation.
 - **New Requirement:** 1 hour time spent this Reincarnation.
 - **Effect:** Increase the production of all buildings based on time spent in this Reincarnation.
 - **Old Formula:** $(0.03 * (2 * x)^{0.7})\%$, where x is time spent this Reincarnation.
 - **New Formula:** $(0.3 * x^{0.7})\%$, where x is time spent this Reincarnation.
- **A150 and A270 swapped**
- **A150** (Synthesis)
 - **Effect:** Increase the duration of all spells based on Faction Coins found in this Era.
 - **Formula:** $(1.5 * \ln(1 + x)^{1.5})\%$, where x is Factions Coins found this Era. (Unchanged)
- **A200** (Corrosion)
 - **Effect:** Increase clicking reward based on time spent in this Era.
 - **Old Formula:** $(0.07 * (2 * x)^{0.75})\%$, where x is time spent in this Era.
 - **New Formula:** $(3 * x^{0.7})\%$, where x is time spent this Era.
- **A250** (Philosopher's Stone)
 - **Effect:** Increase production bonus from Gems based on Research Points.
 - **Old Formula:** $+(0.04 * x^{0.9})$, where x is Research Points.
 - **New Formula:** $+(0.04 * x^{0.92})$, where x is Research Points.
- **A251** (Infusion)
 - **Old Effect:** Increase the production of Stonehenges (Stone Pillars) based on mana produced in this Era.
 - **New Effect:** Increase the production of Stonehenges based on mana produced in this Reincarnation.
 - **Old Formula:** $(0.75 * x^{0.6})\%$, where x is mana produced this Era.
 - **New Formula:** $(0.75 * x^{0.75})\%$, where x is mana produced this Reincarnation.
- **A270** (Explosives)

- **Old Effect:** Whenever you cast a spell, increase the production of your most productive building based on mana produced in this Era for 20 seconds. Casting another spell while this effect is active refreshes the duration.
 - **New Effect:** Increase the production of your most productive building based on excavation depth.
 - **Old Formula:** $(0.7 * x^{0.6})\%$, where x is mana produced this Era.
 - **New Formula:** $(60 + 60 * x^{0.6})\%$, where x is excavation depth.
- **A300** (Creeping)
 - **Old Effect:** Increase Mana Regeneration based on mana produced in this Era.
 - **New Effect:** Multiplicatively increase Mana Regeneration based on mana produced in this Reincarnation.
 - **Old Formula:** $+(3 * \ln(1 + x)^{1.2})$, where x is mana produced this Era.
 - **New Formula:** $(3.5 * \ln(1 + x)^{1.5})\%$, where x is mana produced this Reincarnation.
- **A375** (Transfusion)
 - **Old Effect:** Gain assistants based on mana produced in this Era.
 - **New Effect:** Gain 300 assistants. Multiplicatively increase assistants based on mana produced in this Era.
 - **Old Formula:** $+(4.5 * \ln(1 + x))$, where x is mana produced this Era.
 - **New Formula:** $(3 * \ln(1 + x)^{1.5})$, where x is mana produced this Era.
- **A410** (Poisons)
 - **Old Effect:** Increase the production of all other buildings by 95% per Spider Sanctuary (Dark Temple) built.
 - **New Effect:** Increase the production of all other buildings by 120% per Spider Sanctuary built.
- **A495** (Elixirs)
 - **Old Effect:** Increase the production of assistants based on Research Points.
 - **New Effect:** Multiplicatively increase Maximum Mana based on Research Points.
 - **Formula:** $(4.5 * x^{0.45})\%$, where x is Research Points.
- **A545 effect swapped with E480**
- **A545** (Mineralogy)
 - **Effect:** Increase the production of Non-Unique Buildings based on spells cast in this Reincarnation.
 - **Old Formula:** $(0.65 * x^{0.65})\%$, where x is spells cast this Reincarnation.
 - **New Formula:** $(0.7 * x^{0.7})\%$, where x is spells cast this Reincarnation.
- **A590** (Hexing)
 - **Old Effect:** Increase the production of all buildings based on mana produced and the percentage of offline time spent in this Era.
 - **New Effect:** Increase the production of all buildings based on mana produced in this Era.
 - **Formula:** $(5 * x^{0.55})\%$, where x is mana produced this Era.
- **A1200** (Melting)
 - **Old Effect:** Increase the production of all other buildings by 0.35% per Wyrms Den (Iron Stronghold) built.
 - **New Effect:** Increase the production of all other buildings by 135% per Wyrms Den built.
- **A1325** (Calefaction)
 - **Effect:** Increase Mana Regeneration based on Excavation depth.
 - **Old Formula:** $+(0.02 * x)$, where x is Excavation depth.
 - **New Formula:** $+(0.15 * x^{1.15})$, where x is Excavation depth.
- **A1500** (Sublimation)
 - **Old Requirement:** 6 hours Grand Balance activity time this Era.
 - **New Requirement:** 1 hour Grand Balance activity time this Era.
 - **Old Effect:** Increase Faction Coin find chance based on Unique Buildings built.
 - **New Effect:** Multiplicatively increases Mana Regeneration based on Unique Buildings built.
 - **Formula:** $(0.8 * x^{0.8})\%$, where x is Unique Buildings built.
- **A5125** (Putrefaction)
 - **New Requirement:** 2 hours time spent this Era.
- **A5625** (Reduction)
 - **New Requirement:** 1 day duration of your longest spell.
 - **Old Effect:** Additively reduce the cost of all spells based on their individual duration.
 - **New Effect:** Multiplicatively reduce the cost of all spells based on their individual duration, with a minimum of 10% and maximum of 90% reduction.
 - **Old Formula:** $-((x / y)^{0.65})$, where x is current duration and y is base duration.
 - **New Formula:** $(\ln(1 + x / y)^2)\%$, where x is current duration and y is base duration.
- **A5875** (Equivalence)
 - **New Requirement:** 1e40 (10 Dd) Faction Coins found this Era.
- **A11125** (Alkahest)
 - **New Requirement:** 25 active spells.
- **A11375** (Azoth)
 - **New Requirement:** 1e20 (100 Qi) Mana Regeneration.
 - **Effect:** Increase clicking reward based on Mana Regeneration.
 - **Old Formula:** $(2 * \log_{10}(1 + x)^2)\%$, where x is Mana Regeneration.
 - **New Formula:** $(\ln(1 + x)^2)\%$, where x is Mana Regeneration.
- **A11625** (Anima Mundi)
 - **New Requirement:** 1e13% (10 T) Faction Coin find chance.
 - **Effect:** Multiplicatively increase Maximum Mana based on Faction Coins found in this Reincarnation.
 - **Old Formula:** $(0.4 * \log_{10}(1 + x)^2)\%$, where x is Faction Coins found this Reincarnation.

- **New Formula:** $(0.2 * \ln(1 + x) ^ 1.8)\%$, where x is Faction Coins found this Reincarnation.
- **A11875** (Liquefaction)
 - **New Requirement:** 2 hours time spent this Era, Demon Bloodline purchased
- **A12250** (Folgoration)
 - **New Requirement:** 3 Excavation Resets in this Era
 - **Effect:** While both Diamond Pickaxe and God's Hand are active, multiplicatively increase Mana Regeneration and Faction Coin find chance based on Excavations Made and Excavation Resets made in this Reincarnation.
 - **Old Formula:** $(15 + 1.75 * (x * y) ^ 0.75)\%$, where x is Excavations Made and y is Excavation Resets this Reincarnation.
 - **New Formula:** $((15 + 3 * (x * (1 + y)))^0.75)\%$, where x is Excavations Made and y is Excavation Resets this Reincarnation.
- **A13125** (Cinnabar)
 - **New Requirement:** 2 hours Catalyst activity time this Era.
- **A13500** (Lunafaction)
 - **New Requirement:** 2 hours time spent as Balance this Reincarnation.
 - **Old Effect:** All Balance spells can be cast up to 3 tiers above their Ascension maximum.
 - **New Effect:** All Balance spells gain 1 tier.

Warfare

- **W1** (Assault)
 - **Effect:** Increase the production of Infernal Realms (Hell's Portals) based on Hellfire Blast casts in this Era.
 - **Old Formula:** $(30 * x ^ 0.7)\%$, where x is Hellfire Blast casts this Era.
 - **New Formula:** $(160 + 80 * x ^ 0.8)\%$, where x is Hellfire Blast casts this Era.
- **W10** (Dueling)
 - **Old Effect:** Increase the production of all other buildings by 90% per Training Ground (Warrior Barracks) built.
 - **New Effect:** Increase the production of all other buildings by 130% per Training Ground built.
- **W25** (War Funds)
 - **Effect:** Increase the production of all buildings based on Tax Collection casts in this Era.
 - **Old Formula:** $(5 * x ^ 0.5)\%$, where x is Tax Collection casts this Era.
 - **New Formula:** $(10 * x ^ 0.4)\%$, where x is Tax Collection casts this Era.
- **W50** (Exertion)
 - **Old Requirement:** 12 hours time spent as Evil this Reincarnation.
 - **New Requirement:** 1 hour time spent as Evil this Reincarnation.
 - **Effect:** Increase Faction Coin find chance based on Undercities (Necropolises) built.
 - **Old Formula:** $+(1.5 * x ^ 1.1)$ where x is Undercities built.
 - **New Formula:** $+(2 * x ^ 1.2)$ where x is Undercities built.
- **W120** (Betrayal)
 - **Effect:** Increase the production of Non-Unique Buildings based on assistants owned.
 - **Old Formula:** $(1.5 * x ^ 1.5)\%$, where x is assistants owned.
 - **New Formula:** $(9 * x ^ 0.9)\%$, where x is assistants owned.
- **W150** (Invasion)
 - **Effect:** Increase the production of all buildings based on assistants owned,
 - **Old Formula:** $(32 * x ^ 0.75)\%$, where x is assistants owned,
 - **New Formula:** $(15 * x ^ 0.5)\%$, where x is assistants owned,
- **W175** (Overwhelm)
 - **Effect:** Gain assistants based on Evil spells cast in this Reincarnation.
 - **Old Formula:** $+(10 + x ^ 0.9)$, where x is Evil spells cast this Reincarnation.
 - **New Formula:** $+(9 + 0.9 * x ^ 0.9)$, where x is Evil spells cast this Reincarnation.
- **W180** (Formation)
 - **Old Requirement:** 1,000 Call to Arms casts this Reincarnation.
 - **New Requirement:** 150 Call to Arms casts this Reincarnation.
- **W200** (Crusade)
 - **Old Effect:** Gain assistants based on time spent as Good in this Reincarnation.
 - **New Effect:** Multiplicatively increase Royal Exchange bonus based on Research Points.
 - **Formula:** $(2 * x ^ 0.6)\%$, where x is Research Points.
- **W205** (Berserking)
 - **Old Requirement:** 850 Blood Frenzy casts this Reincarnation.
 - **New Requirement:** 200 Blood Frenzy casts this Reincarnation.
 - **Effect:** While Blood Frenzy is active, increase Mana Regeneration based on assistants owned.
 - **Old Formula:** $+(0.25 * x ^ 0.9)$, where x is assistants owned.
 - **New Formula:** $+(3 * x ^ 0.45)$, where x is assistants owned.
- **W250** (Swarming)
 - **Effect:** Gain assistants based on Trophies unlocked.
 - **Old Formula:** $+(0.125 * x)$, where x is Trophies unlocked.
 - **New Formula:** $+(x ^ 1.05)$, where x is Trophies unlocked.
 - **New Additional Effect:** Multiplicatively increase assistants by 10%.
- **W260** (Athletics)

- **Old Effect:** Increase the production of all other buildings by 100% per Olympian Hall (Hall of Legends) built.
 - **New Effect:** Increase the production of all other buildings by 200% per Olympian Hall built.
- **W275** (Domination)
 - **Effect:** Increase Faction Coin find chance based on the highest amount of assistants owned in this Reincarnation.
 - **Old Formula:** $+(200 * x^{0.55})\%$, where x is the highest amount of assistants owned this Reincarnation.
 - **New Formula:** $+(100 * x^{0.5})\%$, where x is the highest amount of assistants owned this Reincarnation.
 - **Old Effect:** Also multiplicatively increase Faction Coin find chance by 50%.
 - **New Effect:** Also multiplicatively increase Faction Coin find chance by 100%.
- **W320** (Shattering)
 - **Old Requirement:** 2,650 Excavation depth.
 - **New Requirement:** 2,600 Excavation depth.
 - **Old Effect:** Increase clicking reward based on Excavation depth.
 - **New Effect:** Increase offline production based on Excavation depth.
 - **Formula:** $(10 * x^{0.9})\%$, where x is Excavation depth.
- **W350** (Survival)
 - **Effect:** Increase the production of all other buildings based on the production of your Stonehenges.
 - **Old Formula:** $(75 * (\log_{10}(1 + x))^{1.3})\%$, where x is the production of your Stonehenges.
 - **New Formula:** $(8 * (\ln(1 + x))^{1.8})\%$, where x is the production of your Stonehenges.
- **W405** (Ambush)
 - **Effect:** Increase the production of Spider Sanctuaries (Dark Temples) based on Offline production
 - **Old Formula:** $(3.25 * \log_{10}(1 + x)^{3.25})\%$, where x is Offline production.
 - **New Formula:** $(3.5 * \ln(1 + x)^{3.5})\%$, where x is Offline production.
- **W520** (Stalking)
 - **Old Effect:** Gain 1 assistant for every 100 seconds of Combo Strike activity time this Era.
 - **New Effect:** Multiplicatively increase assistants based on Combo Strike activity time in this Reincarnation.
 - **Formula:** $(x^{0.6})\%$, where x is Combo Strike activity time this Reincarnation.
- **W525** (Bloodlust)
 - **Old Requirement:** 1.5 days spent as Evil this Reincarnation.
 - **New Requirement:** 1.5 hours spent as Evil this Reincarnation.
 - **Old Effect:** Increase Blood Frenzy bonus based on Faction spells cast in this Era.
 - **New Effect:** While Blood Frenzy is active, increase the production of all buildings based on Faction spells cast in this Era.
 - **Formula:** $(15 * x^{0.75})\%$, where x is Faction spells cast this Era.
- **W560** (Resilience)
 - **Old Effect:** Increase clicking reward based on clicks made in this Era.
 - **New Effect:** Multiplicatively increase assistants based on clicks made in this Era.
 - **Formula:** $(3.5 * x^{0.35})\%$, where x is your Clicks (this Era) stat.
- **W1275** (Authority)
 - **Old Requirement:** 12 hours Call to Arms activity time this Era.
 - **New Requirement:** 2 hours Call to Arms activity time this Era.
- **W1375** (Scavenging)
 - **Old Requirement:** 7 days spent as Evil All-time.
 - **New Requirement:** 12 hours spent as Evil All-time.
 - **Effect:** Increase Faction Coin find chance based on assistants owned.
 - **Old Formula:** $+(100 * x^{0.5})\%$, where x is assistants owned.
 - **New Formula:** $+(40 * x^{0.4})\%$, where x is assistants owned.
 - **Old Effect:** Also multiplicatively increase Faction Coin find chance by 200%.
 - **New Effect:** Also multiplicatively increase Faction Coin find chance by 160%.
- **W1400** (Cataclysm)
 - **Old Effect:** Increase maximum mana based on clicks made in this Era.
 - **New Effect:** Multiplicatively increase maximum mana based on clicks made in this Era.
 - **Old Formula:** $+(650 * x^{0.35})$, where x is clicks made this Era.
 - **New Formula:** $(25 + 0.5 * x^{0.5})\%$, where x is clicks made this Era.
- **W3150** (Upheaval)
 - **Old Effect:** Increases the production of all buildings based on their tier, giving the highest bonus to the lowest.
 - **New Effect:** Increases the production of all buildings based on time spent as your least used alignment in this Reincarnation, giving the highest bonus to the lowest building tier.
 - **Old Formula:** $(150 * (12 - T)^{2.15})\%$
 - **New Formula:** $(0.5 * (60 + x)^{0.75} * (12 - T)^{2.15})\%$, where x is the time spent as your least used alignment this Reincarnation.
- **W5125** (Sovereignty)
 - **New Requirement:** 50,000 Halls of Legends built.
- **W5625** (Concealment)
 - **New Requirement:** 1e6 (1 M) clicks made this Era.
 - **Old Effect:** Offline time counts more based on mana produced in this Era.
 - **New Effect:** Offline time counts 50% more and increase production bonus from Gems based on Mana produced in this Era.

- **New Formula:** $(\ln(1 + x) ^ 1.7)\%$, where x is Mana produced in this Era.
- **W5875** (Patience)
 - **New Requirement:** 1e20 (100 Qi) Maximum Mana.
 - **Effect:** Time spent with Prestige factions counts 500% more.
 - **Effect:** Time spent with Astral factions counts 1000% more.
 - **New Additional Effect:** Time spent with Mercenary counts 1000% more.
 - **New Additional Effect:** While playing as your least used faction, multiplicatively increase Faction Coin find chance by 500%.
- **W10875** (Revolution)
 - **Effect:** Gain assistants based on Royal Exchanges purchased.
 - **Old Formula:** $+(x ^ 0.75)$, where x is royal exchanges purchased.
 - **New Formula:** $+(8 * x ^ 0.8)$, where x is royal exchanges purchased.
- **W11125** (Vengeance)
 - **New Requirement:** 10 minutes Call to Arms duration.
 - **Effect:** Increase Offline production based on the duration of your longest spell.
 - **Old Formula:** $(5 + 1.5 * x ^ 0.5)\%$, where x is the duration of your longest spell.
 - **New Formula:** $(25 + 2.5 * x ^ 0.75)\%$, where x is the duration of your longest spell.
- **W11375** (Pacifism)
 - **New Requirement:** 2 hours time spent as Neutral this Era.
 - **Effect:** Increase all spells durations based on time spent in this Era.
 - **Old Formula:** $(0.7 * x ^ 0.7)\%$, where x is time spent this Era.
 - **New Formula:** $(0.3 * x ^ 0.7)\%$, where x is time spent this Era.
- **W11625** (Eradication)
 - **Name:** Renamed from Genocide to Eradication.
 - **New Requirement:** 1e7% (10 M) Offline production.
 - **Effect:** Increase the production of all buildings based on time spent as your least used faction this Reincarnation.
 - **Old Formula:** $(50 + x ^ 0.85)\%$, where x is time spent as your least used faction this Reincarnation.
 - **New Formula:** $(85 + 1.85 * x ^ 0.85)\%$, where x is time spent as your least used faction this Reincarnation.
- **W11875** (Scouting)
 - **New Requirement:** 5 extra Grand Balance targets from Primal Balance (DDCR).
- **W12250** (Raiding)
 - **New Requirement:** 1e6 (1 M) Combo Strike counters.
 - **Effect:** Increase the production of all buildings based on your highest Combo Strike counter this Reincarnation.
 - **Old Formula:** $(2.5 * x ^ 0.5)\%$, where x is highest Combo Strike counter this Reincarnation.
 - **New Formula:** $(0.01 * \ln(1 + x) ^ 5)\%$, where x is highest Combo Strike counter this Reincarnation.
- **W13125** (Artillery)
 - **New Requirement:** 200 triggered Tax Collection Power.
 - **Old Effect:** Increase the duration of all spells based on the highest amount of spells cast this Reincarnation.
 - **New Effect:** Increase triggered Tax Collections based on the highest amount of spells cast in this Reincarnation.
 - **Formula:** $+(1 + 0.5 * \ln(1 + x) ^ 1.25)$, where x is the highest amount of spells cast this Reincarnation.
- **W13500** (Backfire)
 - **New Requirement:** 30 minutes least used alignment time in this Reincarnation
 - **Effect:** Increase the production of Evil buildings based on time spent as Good, the production of Chaos buildings based on time spent as Order, and the production of Chaos Evil buildings as the sum of time spent as Good and Order. Also increases the production of Good and Order buildings based on Evil and Chaos in the same way.
 - **Old Formula:** $(0.7 * x ^ 0.7)\%$, where x is the corresponding time stat.
 - **New Formula:** $(0.75 * x ^ 0.75)\%$, where x is the corresponding time stat.

Forbidden

- **F5250** (Dreamwalking)
 - **New Requirement:** 1e20 (100 Qi) Mana Regeneration
 - **Effect:** Increase Offline production based on time spent offline in this Reincarnation.
 - **Old Formula:** $(0.7 * x ^ 0.7)$, where x is time spent offline this Reincarnation.
 - **New Formula:** $(2 * x ^ 0.8)$, where x is time spent offline this Reincarnation.
- **F5500** (Gathering)
 - **New Requirement:** 2 Excavation Resets this Reincarnation.
- **F5750** (Corruption)
 - **New Requirement:** 250,000 Unique Buildings built.
- **F6000** (Inevitability)
 - **Old Availability:** For all Factions
 - **New Availability:** For Mercenary
 - **New Requirement:** 1 hour time spent as Mercenary this Era.
 - **Effect:** Increase your next Era time headstart based on time spent in this Era. Time granted cannot be higher than time spent in this Reincarnation,
 - **Old Formula:** Formula: $(x ^ 0.75)$, where x is time spent this Era.
 - **New Formula:** Formula: $(10 * x ^ 0.5)$, where x is time spent this Era.
- **F11000** (Godslaying)

- **Effect:** Active spells count more based on the sum of your Faction spells activity time in this Reincarnation.
 - **Old Formula:** $(0.575 * x^{0.575})\%$, where x is the sum of your Faction spells activity time this Reincarnation.
 - **New Formula:** $(0.5 * x^{0.5})\%$, where x is the sum of your Faction spells activity time this Reincarnation.
- **F11250** (Inanity)
 - **New Requirement:** 15,000 highest Excavation depth this Reincarnation.
 - **Effect:** Excavations count more based on time spent offline in this Era.
 - **Old Formula:** $(0.9 * x^{0.45})\%$, where x is time spent offline this Era.
 - **New Formula:** $(x^{0.5})\%$, where x is time spent offline this Era.
- **F11500** (Paradox)
 - **New Requirement:** 60,000 total Research Budget.
- **F11750** (Relativity)
 - **New Requirement:** 5,500 Royal Exchanges purchased.
- **F12000** (Revelations)
 - **New Requirement:** 1e33 (1 Dc) Faction Coins found this Era.
- **F12500** (Avatars)
 - **New Requirement:** 4 different Legacies purchased.
- **F13250** (Taboo)
 - **New Requirement:** 3 hours Call to Arms activity time this Reincarnation.
- **F13750** (The Unseen)
 - **New Requirement:** 4,000 Forbidden Libraries (Monasteries) built.

Bloodlines

- **Note:** Bloodlines no longer suffer from Ascension penalty.
- **Fairy Bloodline**
 - **Effect:** Increase the production of Farms, Inns, and Blacksmiths based on assistants owned.
 - **Old Formula:** $(40 * \ln(1 + x)^4)\%$, where x is assistants owned.
 - **New Formula:** $(18 * \ln(1 + x)^3)\%$, where x is assistants owned.
- **Elven Bloodline**
 - **Effect:** Increase Faction Coin find chance based on Faction Coins found in this Era and autoclick 3 times per second.
 - **Removed Effect:** Autoclicks made this way benefit from a 100 times higher clicking reward and Faction Coin find chance.
 - **Effect:** Also multiplicatively increase Faction Coins find chance based on clicks made this Era.
 - **Old Formula:** $(10 * \log_{10}(1 + x))\%$, where x is clicks made this Era.
 - **New Formula:** $(10 * \ln(1 + x))\%$, where x is clicks made this Era.
- **Angel Bloodline**
 - **Old Effect:** Multiplicatively increase Mana Regeneration based on spells cast this Era.
 - **New Effect:** Multiplicatively increase the duration of all spells based on spells cast in this Era.
 - **Formula:** $(5 * \ln(1 + x)^{1.5})\%$, where x is spells cast in this Era.
 - **New Effect:** Also provide the ability to cast Holy Light regardless of alignment. If your alignment is Good, Holy Light bonus increases over its duration.
 - **Formula:** $(B * (1 + 0.5 * x^{0.5}))\%$, where B is Holy Light's original bonus and x is your Holy Light runtime.
- **Undead Bloodline**
 - **Old Effect:** Gain assistants based on Reincarnations made.
 - **New Effect:** Multiplicatively increase assistants based on Reincarnations made.
 - **Formula:** $(16 * x^{0.8})\%$, where x is Reincarnations made.
- **Demon Bloodline**
 - **Old Effect:** Increase production bonus from gems based on time spent as Evil this Reincarnation.
 - **New Effect:** Spells cast count more based on the maximum amount of Hell Portals built in this Reincarnation.
 - **Formula:** $(2.5 * x^{0.5})\%$, where x is the highest amount of Hell Portals built this Reincarnation.
 - **New Effect:** Also provide the ability to cast Blood Frenzy regardless of alignment. If your alignment is Evil, Blood Frenzy bonus increases based on time spent as Evil All-time.
 - **Formula:** $(x^{0.5})\%$, where x is time spent as Evil All-time.
- **Titan Bloodline**
 - **Effect:** Increase the production of all buildings based on Royal Exchanges purchased.
 - **Old Formula:** $(15 * x^{0.85})\%$, where x is Royal Exchanges purchased.
 - **New Formula:** $(12 * x^{0.8})\%$, where x is Royal Exchanges purchased.
- **Druid Bloodline**
 - **Effect:** Multiplicatively increase Mana Regeneration based on Maximum Mana.
 - **Old Formula:** $((0.18 * x^{0.65}) + (0.0018 * \log_{10}(1 + x)^8))\%$, where x is Maximum Mana.
 - **New Formula:** $((0.25 * x^{0.5}) + (0.0025 * \ln(1 + x)^5))\%$, where x is Maximum Mana.
- **Faceless Bloodline**
 - **Effect:** Increase Maximum Mana based on mana produced in this Era.
 - **Old Formula:** $+(30 * \log_{10}(1 + x)^{3.5})$, where x is mana produced this Era.
 - **New Formula:** $+(3.5 * \ln(1 + x)^{3.5})$, where x is mana produced this Era.
 - **New Additional Effect:** Grant the ability to cast Gem Grinder regardless of alignment. If your alignment is Neutral, Gem Grinder bonus increases chaotically based on assistants owned.
 - **Formula:** $(20 * (\ln(1 + x) / \ln((x \% 10) + 2))^{2})\%$, where x is assistants owned.

- Dwarven Bloodline**
 - Old Effect:** Increase the production of all buildings based on Excavation depth.
 - New Effect:** Increase the base production of each building based on Excavation depth. Bonus increases with building tier.
 - Formula:** $+(\ln(1 + x) ^ 1.75 * 10 ^ ((1.25 * T) ^ 0.75))$ where x is Excavation depth.
- Drow Bloodline**
 - Old Effect:** Multiplicatively increase Faction Coin find chance based on time spent in this Era.
 - New Effect:** Increase the production of all buildings based on mana produced this Reincarnation.
 - Formula:** $(2.75 * \ln(1 + x) ^ 2.75)\%$, where x is mana produced this Reincarnation.
- Dragon Bloodline**
 - Old Effect:** Increase the production of all buildings based on Faction Coin find chance.
 - New Effect:** Increase the production of Unique Buildings based on Faction Coin find chance.
 - Old Formula:** $(4 * x ^ 0.4)\%$, where x is Faction Coin find chance.
 - New Formula:** $(3 * x ^ 0.3)\%$, where x is Faction Coin find chance.
- Archon Bloodline**
 - Ascension 2 Effect:** Gain additional research slots based on time spent this Era.
 - Old Formula:** $+(1 + \text{floor}(0.5 * ((1 + x / 21600) ^ 0.5 - 1)))$, where x is time spent this Era.
 - New Formula:** $+(1 + \text{floor}(0.5 * ((1 + x / 16200) ^ 0.5 - 1)))$, where x is time spent this Era.
 - Ascension 3 Effect:** Increase Research Budget based on time spent this Era.
 - Old Formula:** $+(500 + 0.1 * \ln(1 + x) ^ 4)$, where x is time spent this Era.
 - New Formula:** $+(\ln(1 + x) ^ 3)$, where x is time spent this Era.
- Djinn Bloodline**
 - Effect:** Gain the Catalyst spell.
 - Refer to [Catalyst](#).
- Makers Bloodline**
 - Effect:** Increase your Set power based on Faction Coins found this Era.
 - Old Formula:** $(0.75 * \log_{10}(1 + x) ^ 1.5)\%$, where x is Faction Coins found this Era.
 - New Formula:** $(0.25 * \ln(1 + x) ^ 1.5)\%$, where x is Faction Coins found this Era.

Lineages & Lineage Perks

Lineage

- Note:** Lineages and Lineage Perks no longer suffer from Ascension penalty.
- Lineage levels**
 - Lineages now have a hard cap of 25 levels per Ascension.
 - Cost Formula:** $((C * 10 ^ (L / A)) ^ (1 + (S - G + 1 / (2 * A))) * \text{floor}(L / 25))) ^ H$
 - Where:
 - C: Base cost.
 - L: Current Lineage level.
 - A: Current Ascension.
 - S: Base scaling.
 - G: Ancestral Hourglass $((0.002 * R / A)$, where R is Reincarnation made).
 - H: Ancient Heirloom (0.97).

A	1	2	3	4
C	1e14	5,000	1e14	1e20
S	0.2	1	0.45	0.3

- Refer to [Lineage level cost table](#) for a full list of all Lineage level costs.

Lineage Perks

- Note:** Lineage level 10 Effect removed for all Factions.
 - Effect:** Multiply Faction Coins gain by x100 if it matches this Lineage.
- Lineage Perks now unlock asynchronously: Factions Lineages no longer unlock their Perks at the same level as each other.
- Instead, Lineage Perks are now spread over a wide range of Lineage levels and Reincarnations, at the rate of 2 Perks per Ascension: Perk 1 & 2 in Ascension 1, Perk 3 & 4 in Ascension 2 and Perk 5 & 6 in Ascension 3.
- Each Perk’s Reincarnation and Lineage level requirements are displayed on their respective tooltips in the Lineage container.
- Refer to [Lineage Perks unlock table](#) for new Reincarnation & Level requirements of all Perks.

Fairy

- Fairy Perk 1**
 - Old Effect:** Fairy Bloodline also affects Hall of Legends.
 - New Effect:** Fairy Bloodline and Fairy Chanting also affect Halls of Legends.
- Fairy Perk 3**
 - Old Effect:** Gain assistants based on Unique Buildings built.

- **New Effect:** Multiplicatively increase assistants based on Unique Buildings built.
 - **Formula:** $(0.3 * x^{0.6})\%$, where x is Unique Buildings built.
- **Fairy Perk 4**
 - **Effect:** While Fairy Chanting is active, multiplicatively increase assistants based on its duration.
 - **Old Formula:** $(2.5 * x^{0.25})\%$, where x is Fairy Chanting duration.
 - **New Formula:** $(1.5 * x^{0.5})\%$, where x is Fairy Chanting duration.

Elven

- **Elven Lineage**
 - **Old Effect:** Autoclick once per second per Lineage level. Clicks count more by 5000% per Lineage level.
 - **New Effect:** Autoclick based on Lineage level.
 - **Formula:** $+(L^{1.25})$
- **Elven Perk 1**
 - **Old Effect:** Increase Elven Bloodline's autoclick to 9 per second and their multiplier to x10000.
 - **New Effect:** Gain Elven Luck. Increase the production of all buildings based on Elven Lucks triggered in this Era.
 - **Formula:** $(30 + 3 * x)\%$, where x is Elven Lucks triggered this Era.
 - **Note:** Elven Luck provided this way suffers from Ascension penalty in the same way as the Elven upgrade EL8 (Elven Luck).
- **Elven Perk 3**
 - **Removed Effect:** Increase base clicking reward based on Unique Buildings built.
 - **Effect:** Increase clicking reward based on Unique Buildings built.
 - **Old Formula:** $(0.85 * x^{0.85})\%$, where x is Unique Buildings built.
 - **New Formula:** $(x^{0.9})\%$, where x is Unique Buildings built.
- **Elven Perk 4**
 - **Old Effect:** While Moon Blessing is active, multiplicatively increase Faction Coin find chance by 1500%.
 - **New Effect:** While Moon Blessing is active, multiplicatively increase Faction Coin find chance based on its duration.
 - **Formula:** $(1.5 * x^{0.75})\%$, where x is Moon Blessing duration.

Angel

- **Angel Lineage**
 - **Old Effect:** Multiplicatively increase Mana Regeneration by 7% per Lineage level.
 - **New Effect:** Multiplicatively increase Mana Regeneration based on Lineage levels.
 - **Formula:** $(15 * L^{1.5})\%$
- **Perk 1 and Perk 3 swapped**
- **Angel Perk 1**
 - **Old Effect:** Increase God's Hand bonus based on Unique Buildings built.
 - **New Effect:** Reduce all Faction spells cost by 200. Reduce cost scaling for higher Tier spells.
 - **Formula:** : $-(0.1)$ for Normal spells, $-(0.3)$ for Extraordinary spells.
 - **Note:** Refer to [Spell Tiers](#) for more details.
- **Angel Perk 2**
 - **Old Challenge:** Play for 2 hours straight with at least one spell active at all time. You need to start within one minute of a new Era.
 - **New Challenge:** Play for 20 minutes straight with at least one spell active at all time. You need to start within one minute of a new Era.
- **Angel Perk 3**
 - **Effect:** Angel Bloodline counts spell casts this Reincarnation for its bonus instead.
- **Angel Perk 4**
 - **Old Effect:** While God's Hand is active, multiplicatively increase Maximum Mana by 50%.
 - **New Effect:** While God's Hand is active, multiplicatively increase Maximum Mana based on its duration.
 - **Formula:** $(1.5 * x^{0.5})\%$, where x is God's Hand duration.

Goblin

- **Goblin Lineage**
 - **Old Effect:** Increase Tax Collection worth by +25 seconds per Lineage level.
 - **New Effect:** Multiplicatively increase Tax Collection worth based on Lineage level.
 - **Formula:** $(1.5 * L^{1.5})\%$
- **Goblin Perk 1**
 - **Old Effect:** Increase Tax Collection worth based on assistants owned.
 - **New Effect:** Non-Unique Buildings gain all production bonuses that affect Unique Buildings.
 - **Note:** The bonus is only for effects that affect all Unique Buildings in general and not any individual Unique Buildings. Essentially, effects that are "Increase the production of Unique Buildings ..." become "Increase the production of all buildings ...".
- **Goblin Perk 4**
 - **Old Effect:** Goblin's Greed no longer produces Faction Coins instantly. While Goblin's Greed is active, multiplicatively increase Faction Coin find chance based on your Reincarnation requirement.
 - **Formula:** $(20 + \ln(1 + x)^{1.85})\%$, where x is your Reincarnation Gems requirement.

- **New Effect:** While Goblin's Greed is active, multiplicatively increase Tax Collection worth based on Goblin's Greed duration.
 - **Formula:** $(2 * x^{0.4})\%$, where x is Goblin's Greed duration
- **Goblin Perk 5**
 - **Old Effect:** Increase Faction Coin find chance by 1000%.
 - **New Effect:** Spells activity time count 100% more.

Undead

- **Undead Lineage**
 - **Old Effect:** Multiplicatively increase assistants by 1% per Lineage level.
 - **New Effect:** Multiplicatively increase assistants based on Lineage levels.
 - **Formula:** $(L^{1.5})\%$
- **Undead Perk 1**
 - **Old Effect:** Undead Bloodline multiplicatively increases assistants by 5 times the amount instead of gaining them.
 - **New Effect:** Spiritual Surge mana cost is decreased by 90%. Increase Offline production and Offline gains of mana produced and spell casts based on Spiritual Surge duration.
 - **Offline production Formula:** $(x^{0.6})\%$, where x is Spiritual Surge duration.
 - **Offline gains Formula:** $(0.6 * x^{0.6})\%$, where x is Spiritual Surge duration.
- **Undead Perk 3**
 - **Old Effect:** Gain 10 assistants per 500 Unique Buildings built.
 - **New Effect:** Multiplicatively increases Maximum Mana based on Unique Buildings built.
 - **Formula:** $(0.3 * x^{0.7})\%$, where x is Unique Buildings built.
- **Undead Perk 4**
 - **Old Effect:** Increase offline production based on Night Time activity time in this Era.
 - **New Effect:** Increase offline production based on Night Time activity time in this Reincarnation.
 - **Old Formula:** $(7 * x^{0.7})\%$, where x is Night Time activity time this Era.
 - **New Formula:** $(15 + 1.5 * x^{0.5})\%$, where x is Night Time activity time this Reincarnation.

Demon

- **Demon Perk 1**
 - **Old Effect:** Increase Maximum Mana by +20 per Trophy unlocked.
 - **New Effect:** Evil spells gain 1 tier.
- **Demon Perk 2**
 - **Old Challenge:** 2 days of Hellfire Blast activity time this Reincarnation.
 - **New Challenge:** 6 hours of Hellfire Blast activity time this Reincarnation.
- **Demon Perk 3**
 - **Effect:** Multiplicatively increase production bonus from Gems based on Unique Buildings built.
 - **Old Formula:** $(0.6 * x^{0.66})\%$, where x is Unique Buildings built.
 - **New Formula:** $(x^{0.666})\%$, where x is Unique Buildings built.

Titan

- **Titan Lineage**
 - **Old Effect:** Increase Royal Exchange bonus and make Royal Exchanges count more by 200% per Lineage level.
 - **New Effect:** Multiplicatively increase Royal Exchange bonus based on Lineage level.
 - **Formula:** $(10 + 1.5 * L^{1.5})\%$
- **Titan Perk 1**
 - **Old Effect:** Removes 1 Ascension penalty from Titan Bloodline.
 - **New Effect:** Reduce the building cost multiplier of tier 9 buildings (Royal Castles / Evil Fortresses / Iron Strongholds) (-0.02). Also increase their production based on Royal Exchanges purchased.
 - **Formula:** $(3 * x^{0.7})\%$, where x is Royal Exchanges purchased.
- **Titan Perk 3**
 - **Old Effect:** Increase the base production of tier 4 and tier 7 buildings based on Unique Buildings built.
 - **New Effect:** Increases the production of assistants based on Unique Buildings built.
 - **Formula:** $(3 * x^{0.6})\%$, where x is Unique Buildings built.

Druid

- **Druid Perk 1**
 - **Effect:** Increases the production of Non-Unique Buildings based on time spent in this Era.
 - **Old Formula:** $(0.25 * x^{1.25})\%$, where x is time spent this Era.
 - **New Formula:** $(1.5 * x^{1.5})\%$, where x is time spent this Era.
- **Druid Perk 3**
 - **Old Effect:** Spells activity time count 3% more per 1,000 Unique Buildings built.
 - **New Effect:** Spells activity time count 0.5% more per 2,500 Unique Buildings built.

Faceless

- **Faceless Lineage**
 - **Effect:** Increase spell durations based on lineage level

- **Old Formula:** $(L ^ 2)\%$
- **New Formula:** $(1.5 * L ^ 1.5)\%$
- **Faceless Perk 1**
 - **Effect:** Faceless Bloodline counts mana produced this Reincarnation for its bonus instead. Increases Mana Regeneration based on assistants owned.
 - **Old Formula:** $+(0.95 * x ^ 0.95)$, where x is assistants owned.
 - **New Formula:** $+(3 * x ^ 0.55)$, where x is assistants owned.
- **Faceless Perk 2**
 - **Old Challenge:** 100 Brainwave casts this Era.
 - **New Challenge:** 50 Brainwave casts this Era.
- **Faceless Perk 3**
 - **Old Effect:** Multiplicatively increase the production of assistants based on Unique Buildings built.
 - **New Effect:** Multiplicatively increase Maximum Mana based on Unique Buildings built.
 - **Formula:** $(3.5 * x ^ 0.5)\%$, where x is Unique Buildings built.
- **Faceless Perk 4**
 - **Old Effect:** Remove 1 Ascension penalty from Brainwave on Unique Buildings.
 - **New Effect:** While Brainwave is active, multiplicatively increase production bonus from Gems based on its duration.
 - **Formula:** $(1.5 * x ^ 0.5)\%$, where x is Brainwave duration.

Dwarven

- **Dwarven Lineage**
 - **Old Effect:** Increase the base production of all buildings based on their tier and Lineage level.
 - **New Effect:** Multiplicatively increase Faction Coin find chance based on Lineage level.
 - **Formula:** $(10 + 0.75 * L ^ 1.5)\%$
- **Dwarven Perk 1**
 - **Old Effect:** Increases Faction Coin find chance based on time spent as Good this Reincarnation.
 - **New Effect:** Increase the production of all buildings based on Excavation depth.
 - **Formula:** $(6.5 * x ^ 0.65)\%$, where x is Excavation depth.
- **Dwarven Perk 2**
 - **Old Challenge:** 10,000 Excavation depth.
 - **New Challenge:** 8,000 Excavation depth.
- **Dwarven Perk 3**
 - **Effect:** Excavations and Artifacts count more based on Unique Buildings built.
 - **Old Formula:** $(0.58 * x ^ 0.58)\%$, where x is Unique Buildings built.
 - **New Formula:** $(0.3 * x ^ 0.7)\%$, where x is Unique Buildings built.
- **Dwarven Perk 4**
 - **Old Effect:** While Diamond Pickaxe is active, multiplicatively increase Mana Regeneration based on Faction Coin find chance.
 - **New Effect:** While Diamond Pickaxe is active, multiplicatively increase Mana Regeneration based on its duration.
 - **Formula:** $(1.5 * x ^ 0.5)\%$, where x is Diamond Pickaxe duration.
- **Dwarven Perk 5**
 - **Old Effect:** Buildings count 75% more.
 - **New Effect:** Buildings count 100% more.

Drow

- **Drow Perk 1**
 - **Old Effect:** Time counts more based on highest Combo Strike counter All-time.
 - **New Effect:** Time counts 50% more. Multiplicatively increase Maximum Mana based on highest Combo Strike counter All-time.
 - **Formula:** $(\ln(1 + x) ^ 1.8)\%$, where x is highest Combo Strike counter All-time.
- **Drow Perk 2**
 - **Old Challenge:** 30 days time spent offline All-time.
 - **New Challenge:** 3 days time spent offline All-time.
- **Drow Perk 3**
 - **Effect:** Multiplicatively increase Faction Coin find chance based on Unique Buildings built.
 - **Old Formula:** $(0.5 * x ^ 0.5)\%$, where x is Unique Buildings built.
 - **New Formula:** $(2 * x ^ 0.8)\%$, where x is Unique Buildings built.
- **Drow Perk 4**
 - **Old Effect:** Increase Combo Strike's bonus by 5% per 30 seconds time spent in this Era.
 - **New Effect:** Increase Combo Strike's base bonus based on time spent in this Era.
 - **Formula:** $+(0.5 * x)$, where x is time spent this Era.
 - **Combo Strike**
 - **Base Formula:** $(100 * x ^ 0.9)\%$, where x is Combo Strike counter.
 - **Perk 4 Formula:** $((100 + 0.5 * t) * x ^ 0.9)\%$, where x is Combo Strike counter and t is time spent this Era.
 - **Effect:** While Combo Strike is active, increase the production of all buildings based on Combo Strike counter and Tier.
 - **Old Formula:** $(2 * \log_{10}(1 + x ^ (0.9 * T)) ^ 2)\%$, where x is Combo Strike counter and T is Combo Strike Tier.
 - **New Formula:** $(2 * \ln(1 + x ^ (0.9 * T)) ^ 2)\%$, where x is Combo Strike counter and T is Combo Strike Tier.

Dragon

- **Dragon Lineage**
 - **Old Effect:** Unique Buildings count 12% more per Lineage level.
 - **New Effect:** Increase production of Unique Buildings based on Lineage levels.
 - **Formula:** $(10 * L ^ 1.25)\%$
- **Dragon Perk 1**
 - **Old Effect:** Increase the production of Unique buildings by 1.75% per building of the same tier.
 - **New Effect:** Increase the production of Unique buildings based on their quantity.
 - **Formula:** $(1.95 * x ^ 0.95)\%$, where x is Unique Buildings built.
- **Dragon Perk 2**
 - **Old Challenge:** Have 5 Tier 5 spells active within 5 minutes of a new Era.
 - **New Challenge:** Have 5 Tier 2 spells active within 10 minutes of a new Era.
- **Dragon Perk 3**
 - **Old Effect:** Increase Maximum Mana by +1.25 per 2 Unique Buildings built.
 - **New Effect:** Reincarnations count more based on Unique Buildings built.
 - **Formula:** $(1.5 * x ^ 0.25)\%$, where x is Unique Buildings built.
- **Dragon Perk 4**
 - **Old Effect:** Activates two Breaths per cast.
 - **New Effect:** Red and Black Breaths count their respective stats in this Reincarnation for their bonuses instead.

Archon

- **Archon Lineage**
 - **Old Effect:** Multiplicatively increase Faction Coin find chance by 20% per Lineage level.
 - **New Effect:** Multiplicatively increase Maximum Mana by 15% per Lineage level.
- **Archon Perk 1**
 - **Effect:** Increase the production of Astral Unique Buildings based on Maximum Mana.
 - **Old Formula:** $(0.8 * x ^ 0.8)\%$, where x is Maximum Mana.
 - **New Formula:** $(0.3 * x ^ 0.7)\%$, where x is Maximum Mana.
- **Archon Perk 5**
 - **Old Effect:** Unique Buildings count 100% more.
 - **New Effect:** Research Points count 100% more.

Djinn

- **Djinn Perk 1**
 - **Old Effect:** Limited Wish also counts Catalyst casts in this Era for its bonus. Reduce all spells cost by 25%.
 - **New Effect:** Multiplicatively increase Maximum Mana based on Catalyst activity time in this Reincarnation
 - **Formula:** $(0.7 * x ^ 0.7)\%$, where x is Catalyst activity time this Reincarnation.
- **Djinn Perk 3**
 - **Old Effect:** Tax Collection casts count 3% more per 1,000 Unique Buildings built.
 - **New Effect:** Increase Triggered Tax Collections additively by +1 and multiplicatively by 1% per 5,000 Unique Buildings built.

Makers

- **Makers Lineage**
 - **Old Effect:** Increase Royal Exchange bonus by a multiplicative 8% per Lineage level.
 - **New Effect:** Excavations, Artifacts and Trophies count 4% more per Lineage level.
- **Makers Perk 1**
 - **Old Effect:** Reduce Free Excavation Reset's Excavation depth requirement by 25%.
 - **New Effect:** Reduce Free Excavation Reset's Coins requirement by 3 orders of magnitude (divide the requirement by 1,000).
 - **New Additional Effect:** Multiplicatively increases assistants based on time spent offline in this Reincarnation.
 - **Formula:** $(0.75 * x ^ 0.75)\%$, where x is time spent offline this Reincarnation.
- **Makers Perk 3**
 - **Old Effect:** Increase Offline production by 10% per 500 Unique Buildings built.
 - **New Effect:** Increase Offline production by 10% per 100 Unique Buildings built.
- **Makers Perk 4**
 - **Old Effect:** While Infinite Spiral is active, Increase the production of all buildings by a cumulative 1% per second, up to its maximum duration.
 - **New Effect:** While Infinite Spiral is active, Increase the production of all buildings by a cumulative 3% per second, up to its maximum duration.

Excavation

- **Terminology standardized**
 - **Excavation Depth:** Refers to your current Excavation amount (at the top of the tab).
 - **Excavation Made** (this Era/Reincarnation): Now refers to how many times you have excavated across all Excavation Resets.

- **Excavations now always provide Faction Coins**
 - **Old Formula:** $(1500 + 0.05 * x^{2.75})$, where x is Excavation depth.
 - **New Formula:** $(250 + 0.5 * x^{1.05})^{(1 + 0.35 * A)}$, where x is Excavation depth.
- **Excavation Resets Rework**
 - Free Excavation Reset no longer resets your Coins amount to 0 and no longer applies a stacking 90% penalty to your Coins production.
 - Free Excavation Reset now requires a Coins amount threshold to perform instead of Excavation depth.
 - The first Free Reset has a dynamic Coins requirement of 12 orders of magnitude below the Coins amount needed to reach the current Reincarnation's Gems Requirement.
 - Example: If your current Reincarnation Gems Requirement is $1e27$ Gems, and you need $5e65$ Coins gained this Reincarnation to reach that amount of Gems, the first Free Reset's Coins requirement will be $5e53$ Coins.
 - Refer to [General Progression](#) for Reincarnation Gems Requirement and Coins to Gems conversion formulas.
 - Each subsequent Free Reset will increase the Coins requirement by 3 orders of magnitude each. Effectively, players can make 5 Free Resets each Reincarnation under normal conditions without going over the Reincarnation Gems Requirement.
 - You can no longer perform Free Excavation Resets in Ascension 0.
 - Ruby Excavation Reset is unchanged, and is still performable in Ascension 0.

Artifacts

Quest Artifacts

- **Flame of Bondelnar**
 - **Old Requirement:** 3,250 Excavation depth
 - **New Requirement:** 3,000 Excavation depth
- **Spiky Rough Egg**
 - **Old Requirement:** Reincarnation 46
 - **New Requirement:** Reincarnation 42
- **Astral Fragments**
 - **Old Requirement:** 12,500 Excavation depth
 - **New Requirement:** 5,000 Excavation depth
- **First Iron Fragment**
 - **Old Chance:** $(\log_{10}(1 + x)^3 / 100,000)\%$, where x is Mana Regeneration.
 - **New Chance:** $(\ln(1 + x)^3 / 1e6)\%$, where x is Mana Regeneration.
- **Second Iron Fragment**
 - **Old Chance:** $(x^3 / 5e9)\%$, where x is Royal Exchange bonus.
 - **New Chance:** $(x / 5e7)\%$, where x is Royal Exchange bonus.
- **Third Iron Fragment**
 - **Old Chance:** $((\log_{10}(1 + x) - 2)^3 / 500,000)\%$, where x is Offline production.
 - **New Chance:** $(\ln(1 + x)^3 / 500,000)\%$, where x is Offline production.
- **First Crystal Fragment**
 - **Old Chance:** $(x / 1e11)\%$, where x is assistants owned.
 - **New Chance:** $(x / 1e12)\%$, where x is assistants owned.
- **Second Crystal Fragment**
 - **Old Chance:** $(\log_{10}(1 + x)^3 / 2.5e6)\%$, where x is Faction Coins found this Era.
 - **New Chance:** $(\ln(1 + x)^3 / 5e7)\%$, where x is Faction Coins found this Era.
- **Third Crystal Fragment**
 - **Old Chance:** $(x / 5e7)\%$, where x is Evil spells cast this Reincarnation.
 - **New Chance:** $(x / 66e6)\%$, where x is Evil spells cast this Reincarnation.
- **First Stone Fragment**
 - **Old Chance:** $(\log_{10}(1 + x)^3 / 20,000)\%$, where x is clicks made this Era.
 - **New Chance:** $(\ln(1 + x)^3 / 20,000)\%$, where x is clicks made this Era.
- **Second Stone Fragment**
 - **Old Chance:** $(x / 2e7)\%$, where x is buildings built.
 - **New Chance:** $(x / 1e7)\%$, where x is buildings built.
- **Third Stone Fragment**
 - **Old Chance:** $(\log_{10}(1 + x)^3 / 125,000)\%$, where x is Tax Collection casts this Era.
 - **New Chance:** $(\ln(1 + x)^3 / 125,000)\%$, where x is Tax Collection casts this Era.
- **Obsidian Crown**
 - **Old Chance:** $((x - 10) / 1,000)\%$, where x is Excavation Resets this Era.
 - **New Chance:** $(x / 1,000)\%$, where x is Excavation Resets this Reincarnation.
- **Forgotten Relic**
 - **Old Requirement:** Reincarnation 175
 - **New Requirement:** Reincarnation 180
 - **Old Chance:** $(x^2 / 1e11)\%$, where x is spent Research budget.
 - **New Chance:** $((2 * x)^2 / 1e9)\%$, where x is spent Research budget.

Lore Artifacts

- **Bottled Voice**
 - **Old Chance:** $(x / 40,000)\%$, where x is Fairy Chanting casts this Era.
 - **New Chance:** $(x^{1.5} / 100,000)\%$, where x is Fairy Chanting casts this Era.
- **Divine Sword**
 - **Old Requirement:** 3 consecutive affiliations with Angel this Reincarnation.
 - **New Requirement:** 4 hours time spent as Angel All-time.
 - **Old Chance:** $(x / 60)\%$, where x is consecutive Angel affiliations this Reincarnation.
 - **New Chance:** $(x / 86,400)\%$, where x is time spent as Angel All-time.
- **Jaw Bone**
 - **Old Requirement:** 1 day time spent offline this Reincarnation.
 - **New Requirement:** 1 hour Night Time activity time this Era.
 - **Old Chance:** $(x / 864,000)\%$, where x is time spent offline this Reincarnation.
 - **New Chance:** $(x / 36,000)\%$, where x is Night Time activity time this Era.
- **Demon Horn**
 - **Old Requirement:** 3 consecutive affiliations with Demon this Reincarnation.
 - **New Requirement:** 4 hours time spent as Demon All-time.
 - **Old Chance:** $(x / 60)\%$, where x is consecutive Demon affiliations this Reincarnation.
 - **New Chance:** $(x / 86,400)\%$, where x is time spent as Demon All-time.
- **Titan Shield**
 - **Old Requirement:** 10 hours time spent as Titan this Era.
 - **New Requirement:** 2 hours time spent as Titan this Era.
- **Dawn Stone**
 - **Old Requirement:** Between 5:00 AM and 8:00 AM local (device) time.
 - **New Requirement:** Between 5:00 AM and 11:00 AM local time.
- **Ancestral Hourglass**
 - **Old Chance:** $(x / 5e15)\%$, x your Faction Coin find chance.
 - **New Chance:** $(\ln(1 + x) ^ 1.5 / 5,000)\%$, where x Faction Coin find chance.
- **Silk Cloth**
 - **Old Chance:** $((x - 8,000) / 200,000)\%$, where x is Swarming Towers (Wizard Towers) built.
 - **New Chance:** $(x / 400,000)\%$, where x is Swarming Towers built.
- **Fossilized Wing**
 - **Old Chance:** $(x / 25,920,000)\%$, where x is time spent as Angel All-time.
 - **New Chance:** $(x / 2,592,000)\%$, where x is time spent as Angel All-time.
- **Spiked Whip**
 - **Old Chance:** $((x - 8,000) / 300,000)\%$, where x is Slave Markets (Slave Pens) built.
 - **New Chance:** $(x / 500,000)\%$, where x is Slave Markets built.
- **Dusty Coffin**
 - **Old Chance:** $(1 / (30 + x ^ 1.5))\%$, where x is time spent this Era.
 - **New Chance:** $(x / 2,592,000)\%$, where x is time spent as Undead All-time.
- **Crystallized Lava**
 - **Old Chance:** $((x - 8,000) / 200,000)\%$, where x is Burning Abysses (Hall of Legends) built.
 - **New Chance:** $(x / 200,000)\%$, where x is Burning Abysses.
- **Titan Helmet**
 - **Old Chance:** $(x ^ 2 / 1.5e9)\%$, where x is Royal Exchanges purchased.
 - **New Chance:** $(x ^ 2 / 5e8)\%$, where x is Royal Exchanges purchased.
- **Branch of the Life Tree**
 - **Old Chance:** $(x ^ 3 / 2e6)\%$, where x is Druid Lineage levels.
 - **New Chance:** $(x ^ 3 / 1e6)\%$, where x is Druid Lineage levels.
- **Nightmare Figment**
 - **Old Chance:** $(x ^ 1.5 / 2e7)\%$, where x is Brainwave's headstart.
 - **New Chance:** $(x ^ 1.5 / 1e6)\%$, where x is Brainwave's headstart.
- **Beard Hair**
 - **Old Chance:** $(x / 1e9)\%$, where x is assistants owned.
 - **New Chance:** $(x / 1e13)\%$, where x is assistants owned.
- **Poison Vial**
 - **Old Chance:** $(40 * x ^ 0.9 / 1e7)\%$, where x is Combo Strike counter.
 - **New Chance:** $(100 * x ^ 0.9 / 1e7)\%$, where x is Combo Strike counter.
 - **Note:** Indirectly made easier with Combo Strike's buff.
- **Dragon Scale**
 - **Old Chance:** $(x / 2,500)\%$, where x is active spells.
 - **New Chance:** $(x / 2,000)\%$, where x is active spells.
- **Lantern of Guidance**
 - **Old Chance:** $(x / 1e10)\%$, where x is Mana Regeneration.
 - **New Chance:** $(\ln(1+ x) ^ 3) / 234,567)\%$, where x is Mana Regeneration.
- **Oil Lamp**

- **Old Chance:** $(\min(x, y, z) / 86,400,000)\%$, where x is Fairy Chanting activity time, y is Hellfire Blast activity time and z is Brainwave activity time All-time
 - **New Chance:** $(\min(x, y, z) / 6,480,000)\%$, where x is Fairy Chanting activity time, y is Hellfire Blast activity time and z is Brainwave activity time All-time.
- **Spark of Life**
 - **Old Chance:** $(\log_{10}(1 + x) ^ 2 / 6,000)\%$, where x is Faction Coins found this Era.
 - **New Chance:** $((\log_{10}(1 + x)) ^ 2 / 60,000)\%$, where x is Faction Coins found this Era.
- **Planetary Force**
 - **Old Chance:** $(x ^ 2.5 / 5,000)\%$, where x is consecutive days logged in.
 - **New Chance:** $(x ^ 2.5 / 2,500)\%$, where x is consecutive days logged in.
- **Mercenary Insignia**
 - **Old Chance:** $(\log_{10}(1 + x) - 37) / 10)\%$, where x is Gems owned.
 - **New Chance:** $((0.5 * \log_{10}(1 + x)) ^ 2 / 10,000)\%$, where x is Gems owned.
- **Glowing Wing**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
 - **Old Chance:** $(\log_{10}(1 + x) / 8,000)\%$, where x is mana produced this Era.
 - **New Chance:** $(\ln(1 + x) / 8,000)\%$, where x is mana produced this Era.
- **Sylvan Mirror**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
 - **Old Chance:** $(\log_{10}(1 + x) / 8,000)\%$, where x is Faction Coin find chance.
 - **New Chance:** $(\ln(1 + x) / 8,000)\%$, where x is Faction Coin find chance.
- **Solid Cloud**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
 - **Old Chance:** $(x / 40,000)\%$, where x is active spells.
 - **New Chance:** $(x / 20,000)\%$, where x is active spells.
- **Orc Fang Necklace**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
 - **Old Chance:** $(\log_{10}(1 + x) / 8,000)\%$, where x is Tax Collection casts this Era.
 - **New Chance:** $(\ln(1 + x) / 8,000)\%$, where x is Tax Collection casts this Era.
- **Blood Chalice**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
- **Demon Tail**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
 - **Old Chance:** $(x / 1,000,000)\%$, where x is Evil spell casts this Era.
 - **New Chance:** $(x / 100,000)\%$, where x is Evil spell casts this Era.
- **Frozen Lightning**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
 - **Old Chance:** $(x / 1,000,000)\%$, where x is Lightning Strike activity time this Era.
 - **New Chance:** $(x / 100,000)\%$, where x is Lightning Strike activity time this Era.
- **Primal Leaf**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
- **The Blackest Ink**
 - **Old Requirement:** Reincarnation 220
 - **New Requirement:** Reincarnation 225
 - **Old Chance:** $(x / 10,000)\%$, where x is the longest Era previously this Reincarnation (the current Era does not count).
 - **New Chance:** $(x / 8,000)\%$, where x is the longest Era previously this Reincarnation.

Artifact Upgrades

- **Sun Force - Dawnstone & Duskstone**
 - **Assistants**
 - **Old Formula:** $+(\ln(1 + x) ^ 1.35)$, where x is Gems owned.
 - **New Formula:** $+(0.25 * \ln(1 + x) ^ (1.25 + 0.25 * A))$, where x is Gems owned and A is current Ascension.
 - **Mana Regeneration**
 - **Old Formula:** $+(1.75 * \ln(1 + x) ^ (1.75 + 0.5 * A))$, where x is assistants owned and A is current Ascension.
 - **New Formula:** $+(\ln(1 + x) ^ (1.5 + 0.25 * A))$, where x is assistants owned and A is current Ascension.
 - **Production**
 - **Old Formula:** $(\ln(1 + x) ^ (3 + 3 * A))\%$, where x is Faction Coins found this Era and A is current Ascension.
 - **New Formula:** $(2.5 * \ln(1 + x) ^ (1.25 + 2 * A))\%$, where x is Faction Coins found this Era and A is current Ascension.

- **Offline Production**
 - **Old Formula:** $(10 * x^{(0.85 + 0.15 * A)})\%$, where x is buildings built and A is current Ascension.
 - **New Formula:** $(15 * x^{(0.85 + 0.15 * A)})\%$, where x is buildings built and A is current Ascension.
- **Know Your Enemy, Part II**
 - **Effect:** Increase the production of all buildings based on time spent as Non-Mercenaries.
 - **Old Formula:** $(0.065 * x^{0.65})\%$, where x is time spent as non-Mercenary All-time.
 - **New Formula:** $(0.3 * x^{0.7})\%$, where x is time spent as non-Mercenary All-time.
- **Ancient Heirloom**
 - **Effect:** Reduce Lineage level cost for all Lineages except the highest leveled one.
 - **Old Formula:** $(x^{0.9})$, where x is Lineage level cost.
 - **New Formula:** $(x^{0.97})$, where x is Lineage level cost.
- **Ancestral Hourglass**
 - **Effect:** Reduce Lineage level cost scaling based on Reincarnation.
 - **Old Formula:** $-(0.01 * R)$, where R is Reincarnation.
 - **New Formula:** $-(0.002 * R / A)$, where R is Reincarnation and A is current Ascension.
- **Lantern of Guidance, Oil Lamp, Spark of Life (2nd alignment Lore Artifacts)**
 - **Old Effect:** Unlock Tier 2 for Temporal Flux / Maelstrom / All Creation respectively.
 - **New Effect:** Increase the production of all buildings by 125%.
- **Mana Loom, Factory, Mythos, Vault, Athanor, Battlefield (Ascension 3 Research Facility Artifacts)**
 - **Old Effect:** increase Research Budget of the respective Facility by 3,000.
 - **New Effect:** Increase Research Budget of the respective Facility based on time spent as the corresponding Vanilla Faction's alignments this Reincarnation.
 - **Formula:** $+(500 + \ln(((1 + x) * (1 + y))^{0.5})^3)$, where x and y are the time spent as the alignments matching the Facility's corresponding Vanilla Faction this Reincarnation.
 - **Example:**
 - Spellcraft (Fairy) is increased by x = Good and y = Chaos time.
 - Economy (Goblin) is increased by x = Evil and y = Balance time.
- **Apeiron (Forbidden Facility Artifact)**
 - **Old Effect:** Increase Forbidden's Research Budget by 3,000.
 - **New Effect:** Increase Forbidden's Research Budget based on the highest time spent as both alignments that match a Facility's corresponding Vanilla Faction this Reincarnation.

Formula: $+(500 + 0.75 * \ln(1 + (x * y)^{0.5})^3)$, where x is the highest time spent between Good and Evil alignments and y is the highest time spent among the Order, Chaos and Balance alignments this Reincarnation.

Artifact Sets

- **Note:** Artifact Sets no longer suffer from Ascension penalty.
- **Fairy Set**
 - **Set 1 and 2 effects swapped.**
 - **Set 1 Effect:** Multiplicatively increase Maximum Mana based on Good Buildings built.
 - **Set 2 Effect:** Farms, Inns and Blacksmiths count more based on time spent as Fairy in this Reincarnation.
- **Angel Set**
 - **Set 2 Effect:** Increase the duration of all spells based on Unique Buildings built.
 - **Old Formula:** $(0.7 * x^{0.7})\%$, where x is Unique Buildings built.
 - **New Formula:** $(x^{0.5})\%$, where x is Unique Buildings built.
- **Undead Set**
 - **Set 1 Effect:** Increase Maximum Mana based on Offline production.
 - **Old Formula:** $+(7 * \ln(1 + x)^{3.5})$, where x is Offline production.
 - **New Formula:** $+(7500 + 7.5 * \ln(1 + x)^{3.75})$, where x is Offline production.
 - **Set 2 Effect:** Multiplicatively increases production bonus from Gems based on Faction Coins found this Era.
 - **Old Formula:** $(\log_{10}(1 + x)^2)\%$, where x is Faction Coins found this Era.
 - **New Formula:** $(\ln(1 + x)^2)\%$, where x is Faction Coins found this Era.
- **Demon Set**
 - **Set 1 Effect:** Trophies count more based on the three highest tier buildings built.
 - **Old Formula:** $(0.5 * x^{0.5})\%$, where x is the three highest tier buildings built.
 - **New Formula:** $(x^{0.5})\%$, where x is the three highest tier buildings built.
- **Titan Set**
 - **Set 1 Effect:** Increase Royal Exchange bonus additively and multiplicatively based on time spent in this Era.
 - **Old Additive Formula:** $+(0.3 * x^{0.7})\%$, where x is time spent this Era.
 - **New Additive Formula:** $+(3 * x^{0.7})\%$, where x is time spent this Era.
 - **Old Multiplicative Formula:** $(0.45 * x^{0.45})\%$, where x is time spent this Era.
 - **New Multiplicative Formula:** $(0.6 * x^{0.6})\%$, where x is time spent this Era.
- **Druid Set**
 - **Set 1 Effect:** Increase the duration of all spells based on their individual activity time in this Era.
 - **Old Formula:** $(x^{0.5})\%$, where x is the spell's activity time this Era.
 - **New Formula:** $(0.5 * x^{0.5})\%$, where x is the spell's activity time this Era.
 - **Set 2 Effect:** Lineage levels count more based on spell casts in this Era.
 - **Old Formula:** $(0.5 * \log_{10}(1 + x)^{1.5})\%$, where x is spell casts this Era.

- **New Formula:** $(0.5 * \ln(1 + x) ^ 1.5)\%$, where x is spell casts this Era.
- **Faceless Set**
 - **Set 1 Effect:** Gain assistants based on the highest amount of assistants owned in a previous Era this Reincarnation.
 - **Old Formula:** $+(0.45 * x ^ 0.45)$, where x is the highest amount of assistants owned in a previous Era this Reincarnation.
 - **New Formula:** $+(4500 + 12 * x ^ 0.3)$, where x is the highest amount of assistants owned in a previous Era this Reincarnation.
 - **Set 2 Old Effect:** Increase spell duration based on time spent being offline in this Era.
 - **Set 2 New Effect:** Increase Research Budget based on Faction Coins found in this Era. Capped at +3,000 Budget.
 - **Formula:** $+(\ln(1 + x) ^ 1.5)$, where x is Faction Coins found this Era.
- **Drow Set**
 - **Set 2 Old Effect:** Remove Ascension penalties from Royal Exchange bonus, starting from 0 and removing more levels of penalty over time and increase their production based on Gems owned.
 - **Set 2 New Effect:** Increase the Ascension multiplier for Royal Market bonus by 0.7.
 - **Note:** Refer to [Royal Exchange](#) for more details.
- **Dragon Set**
 - **Set 1 Old Effect:** Increase the duration of all spells based on spell casts in this Reincarnation.
 - **Set 1 New Effect:** Reduce cost scaling for higher Tier spells.
 - **Formula:** : $-(0.1)$ for Normal spells, $-(0.2)$ for Extraordinary spells.
 - **Note:** Refer to [Spell Tiers](#) for more details.
 - **Set 2 Old Effect:** All alignment spells gain 1 Tier and all spells activity time count more based on Excavations Made and Excavation Resets.
 - **Set 2 New Effect:** All alignment spells gain 1 Tier.

Legacies & Legacy Combos

Legacies

- **Maximum Legacies purchasable:** Reduced from 9 to 4.
- **Base Faction's Legacy Faction Coin Cost:**
 - **Old Formula:** $(1e33 * (1,000 ^ (0.5 * (x ^ 2 - x))))$, where x is current Legacy container.
 - **New Formula:** $(1e30 * (1,000 ^ (0.5 * (x ^ 2 - x))))$, where x is current Legacy container.

Legacy Combos

- **Fairy-Elven(Mystic Forest)**
 - **Effect:** Increase the production of all buildings based on assistants owned.
 - **Old Formula:** $(2 * \ln(1 + x) ^ 2)\%$, where x is assistants owned.
 - **New Formula:** $(2 * \ln(1 + x) ^ 3)\%$, where x is assistants owned.
- **Fairy-Angel and Fairy-Undead swapped**
- **Fairy-Angel (Twisting Nether)**
 - **Effect:** Gain the Twisting Nether spell.
 - Refer to [Twisting Nether](#).
- **Fairy-Undead (Dream Realm)**
 - **Old Effect:** Increase Mana Regeneration based on time spent as Good in this Reincarnation.
 - **New Effect:** Increase Mana Regeneration based on time spent as Good and Evil in this Reincarnation.
 - **Old Formula:** $(0.7 * x ^ 0.7)\%$, where x is time spent as Good this Reincarnation.
 - **New Formula:** $(0.75 * (x + y) ^ 0.75)\%$, where x and y are time spent as Good and Evil respectively this Reincarnation.
- **Fairy-Goblin (Artifact Caveau)**
 - **Old Effect:** Increase the production of all buildings based on artifacts found.
 - **New Effect:** Increase the production of all buildings based on Faction Coins found, giving better bonus to lower tiers.
 - **Formula:** $(3 * \ln(1 + x) ^ 0.5 * (12 - T))$, where x is Faction Coins found.
- **Elven-Undead (Swamp of Sorrows)**
 - **Effect:** Activity time of all spells counts more based on Maximum Mana.
 - **Old Formula:** $(2 * \ln(1 + x) ^ 2.25)\%$, where x is your Maximum Mana.
 - **New Formula:** $(1.45 * \ln(1 + x) ^ 1.45)\%$, where x is your Maximum Mana.
- **Elven-Demon (Forbidden Grove)**
 - **Old Effect:** Autoclick based on Unique Buildings built
 - **New Effect:** Autoclick based on Non-Unique Buildings built.
 - **Formula:** $+(1 + 1.5 * x ^ 0.2)\%$, where x is Non-Unique Buildings built.
 - **Old Effect:** Also increase the production of Unique Buildings based on autoclicks made this Era.
 - **New Effect:** Also increases Gem Bonus based on autoclicks made this Era.
 - **Formula:** $(2 * \ln(1 + x) ^ 2)\%$, where x is autoclicks made this Era.
- **Angel-Demon (Eternal Battlefield)**
 - **Effect:** Increase the production of Evil Buildings based on time spent as Good in this Reincarnation, and vice-versa. Does not affect Neutral Buildings.
 - **Old Formula:** $(0.7 * x ^ 0.7)\%$, where x is time spent as Good/Evil in this Reincarnation.
 - **New Formula:** $(0.8 * x ^ 0.8)\%$, where x is time spent as Good/Evil in this Reincarnation.

- **Undead-Demon** (Frozen Wastes)
 - **Effect:** Increase Offline production based on time spent offline in this Reincarnation.
 - **Old Formula:** $(0.7 * x ^ 0.7)\%$, where x is time spent offline this Reincarnation.
 - **New Formula:** $(0.9 * x ^ 0.9)\%$, where x is time spent offline this Reincarnation.
- **Goblin-Undead** (Homunculus Lab)
 - **Effect:** Increase Research Budget based on the lower time spent between Order and Balance in this Reincarnation.
 - **Old Formula:** $+(75 + \ln(1 + \min(x, y)) ^ 3.25)\%$, where x and y is time spent as Order and Balance respectively this Reincarnation.
 - **New Formula:** $+(50 + 1.15 * \ln(1 + \min(x, y)) ^ 3.15)\%$, where x and y is time spent as Order and Balance respectively this Reincarnation.
 - **Note:** Capped at +3,000 Budget.
- **Goblin-Demon** (Corruption Zone)
 - **Old Effect:** Increase the production of Non-Unique Buildings based on the duration of your longest spell.
 - **New Effect:** Additively increase triggered Tax Collections based on Trophies unlocked.
 - **Formula:** $+\text{floor}(0.2 * x ^ 0.6)$, where x is Trophies unlocked.

Trophies

- **Assistant Trophy Series**
 - **Assistant Group**
 - **Old Requirement:** 10 assistants owned.
 - **New Requirement:** 20 assistants owned.
 - **Effect:** Assistant Group, Squad & Legion each unlocks 1 upgrade of the Assistant Upgrade Series.
 - **Assistant Upgrade Series** (Assistant Trade Union, Syndicate & Cartel)
 - **Old Effect:** Increase the production of all buildings by 1% per assistant owned, stacking multiplicatively with upgrades of the same series.
 - **New Effect:** Increase the production of all buildings by 5% per assistant owned, stacking additively with upgrades of the same series.
 - **Note:** 15% per assistant owned in total.
- **Arcane Brilliance**
 - **Requirement:** Unlock Tier 2/3/... for all spells.
 - **New Effect:** If you have unlocked all spell Tiers up to your current Ascension's maximum, grant an upgrade of the same name.
 - **Requirement:** Have all spell Tiers at their Ascension maximum.
 - **Cost:** Free
 - **Effect:** Multiplicatively increase Maximum Mana based on active spells.
 - **Formula:** $(2 * x)\%$, where x is active spells.
- **Art Of The Crow**
 - **Note:** Changed from Secret Trophy to Allegiance Trophy.
 - **Old Cost:** 1e75 (1 Qavg) Coins
 - **New Cost:** 1e70 (10 Dvg) Coins
 - **Effect:** Multiplicatively increase a stat (depending on your 2nd alignment) based on another stat (depending on your 1st alignment).
 - **Good**
 - **Effect:** The amount increased is based on Excavation depth.
 - **Old Formula:** $(0.05 * x) \%$, where x is Excavation depth.
 - **New Formula:** $(0.1 * x ^ 0.9)\%$, where x is Excavation depth.
 - **Evil**
 - **Old Effect:** The amount increased is based on production bonus from Gems.
 - **New Effect:** The amount increased is based on mana produced in this Reincarnation.
 - **Formula:** $(\ln(1 + x) ^ 2)\%$, where x is Mana produced in this R.
 - **Neutral**
 - **Effect:** The amount increased is based on Royal Exchanges purchased.
 - **Old Formula:** $(1.5 * x ^ 0.5)\%$, where x Royal Exchanges purchased.
 - **New Formula:** $(1.5 * x ^ 0.6)\%$, where x Royal Exchanges purchased.
 - **New Additional Effect:** Also increase the production of Non-Unique Buildings by 10,000%
- **Autoclicker**
 - **Old Requirement:** Autoclick 60 times within 1 second.
 - **New Requirement:** Have 40 Autoclick power.
 - **Old Effect:** Multiply Faction Coin find chance by x5 for automatic clicks only.
 - **New Effect:** Increase clicking reward by 750%.
- **Beard Carpet**
 - **Old Requirement:** 1 km beard length (1 day, 3 hours and 47 minutes).
 - **New Requirement:** 4,321 cm beard length (1 hour and 12 minutes).
- **Coin Pillage**
 - **Old Requirement:** Cast Tax Collection 150 times in less than 5 seconds.
 - **New Requirement:** Cast Tax Collection 120 times in less than 5 seconds.
- **Diabolical Evil**

- **Old Requirement:** 6 days, 66 hours, 666 minutes, and 666,666 seconds time spent as Evil All-time (16 days 22 hours 17 minutes and 6 seconds).
- **New Requirement:** 666 minutes time spent as Evil All-time (11 hours and 6 minutes).
- **Dragon Tamer**
 - **Note:** Changed from Secret Trophy to Allegiance Trophy.
 - **Old Effect:** Multiplicatively increase Faction Coin find chance and the production of all buildings by 200%.
 - **New Effect:** Multiplicatively increase Faction Coin find chance by 100% and the production of all buildings based on Reincarnations made.
 - **Production Formula:** $(3.5 * x^{0.95})\%$, where x is Reincarnations made
- **Equality**
 - **Old Requirement:** With at least 3 days time spent in this Reincarnation, have less than 1 minute of difference among time spent as Good, Evil and Neutral alignments Reincarnation.
 - **New Requirement:** With at least 1 day time spent in this Reincarnation, have less than 1 hour of difference among time spent as Good, Evil and Neutral alignments in this Reincarnation.
- **Exchange High Lord**
 - **Old Effect:** Increase Royal Exchange bonus by +250%.
 - **New Effect:** Increase Royal Exchange bonus additively by +1000% and multiplicatively by 10%.
- **Factions Grand Champion**
 - **Old Requirement:** Lineage level 20 and first 3 Perks purchased.
 - **New Requirement:** Lineage level 25 and first 2 Perks purchased.
- **Faction Ruler**
 - **Old Cost:** 1.2e122 (120 Notg) Coins.
 - **New Cost:** 1e134 (100 Tqag) Coins.
- **Future Linkin**
 - **Cost Changed:** From 1e115 to 1e138
 - **Old Cost:** 1e115 (10 Sptg) Coins.
 - **New Cost:** 1e138 (1 Qiqag) Coins.
- **Genealogist**
 - **Note:** Changed from Secret Trophy to Allegiance Trophy.
 - **Old Requirement:** Have 300 total Lineage levels.
 - **New Requirement:** Have 180 total Lineage levels.
 - **Old Cost:** 1e180 (1 NoQig) Coins.
 - **New Cost:** 1e150 (1 QaQig) Coins.
 - **Effect:** Increase the production of all buildings based on total Lineage levels.
 - **Old Formula:** $(2.5 * x^{1.35})\%$, where x is total Lineage levels.
 - **New Formula:** $(5 * x^{1.5})\%$, where x is total Lineage levels.
- **Harlequin**
 - **Old Effect:** Increase the production of all buildings based on the amount of different factions involved in your mercenary upgrades.
 - **New Effect:** Increase the production of all buildings based on the amount of different factions involved in your Mercenary upgrades. Improves over time spent as your least used alignment in this Reincarnation.
 - **Old Formula:** $(x^3)\%$, where x is the number of different factions you've bought upgrades from.
 - **New Formula:** $(10 + x^3 * (1 + 0.03 * y^{0.7}))\%$, where x is the number of different factions you've bought upgrades from and y is the time spent with your least used alignment in this Reincarnation.
- **Holy Frenzy**
 - **Note:** Changed from Secret Trophy to Magic Trophy.
 - **Old Requirement:** 3 days of Holy Light and Blood Frenzy activity time this Reincarnation combined.
 - **New Requirement:** 1 day of Holy Light and Blood Frenzy activity time this Reincarnation combined.
- **Lucky Neutral**
 - **Old Requirement:** 7,777 minutes time spent as Neutral All-time (5 days, 9 hours and 37 minutes).
 - **New Requirement:** 777 minutes time spent as Neutral All-time (12 hours and 57 minutes).
- **Mana Produced Series**
 - **New Trophies:** Mana Squall and Mana Storm added for Ascension 0, between Mana Flood and Mana Wave.
 - **New:** Mana Spring and Mana Falls are now **green**.
 - **Requirement:** All Mana Trophies after Mana Flood had their requirements increased.

Name	Old	New
Mana Squall	-	1e7
Mana Storm	-	2e8
Mana Wave	2e7	2e10
Mana River	1e9	2e12
Mana Lake	2e11	2e14
Mana Sea	1e12	2e16

Mana Ocean	2e12	2e18
Mana Spring	1e14	2e22
Mana Falls	2e20	2e26

- **Mana Droplet - Mana Storm**
 - **Old Effect:** Increase Mana Regeneration by +0.5.
 - **New Effect:** Increase Mana Regeneration by +2.
- **Mana Wave - Mana Falls**
 - **Old Effect:** Increase Mana Regeneration by +50.
 - **New Effect:** Increase Mana Regeneration by +250.
- **MAD Mask upgrades - Archon Mask, Djinn Mask, Makers Mask**
 - **Cost Changed:** From 1e130 to 1e142
- **MAD Masks**
 - **Note:** Changed from Secret Trophy to Allegiance Trophy.
 - **Old Cost:** 1e144 (1 Spqag) Coins.
 - **New Cost:** 1e148 (10 Ocqag) Coins.
- **Mercenary Spirit**
 - **Old Effect:** Increase the production of all buildings by 15% per Reincarnation made.
 - **New Effect:** Increase the production of all buildings based on the activity time of your least used spell in this Reincarnation. Improves with Reincarnation made.
 - **Formula:** $(10 * R + 2 * x^{0.8})\%$, where R is your reincarnation and x is the activity time of your least used spell in this Reincarnation.
- **Novice Combinator**
 - **Old Effect:** Increase the production of all buildings based on time spent as your least used alignment in this Reincarnation.
 - **New Effect:** Multiplicatively increase Mana Regeneration based on time spent as your least used alignment in this Reincarnation.
 - **Old Formula:** $(5 + 2.5 * x^{0.5})\%$, where x is time spent as your least used alignment this Reincarnation.
- **Expert Combinator**
 - **Old requirement:** Have 6 different Factions' Legacies
 - **New Requirement:** Have 5 different Factions' Legacies
 - **Old Effect:** Increase the production of all buildings based on time spent as your least used alignment in this Reincarnation.
 - **New Effect:** Increase Faction Coin find chance based on time spent as your least used alignment in this Reincarnation.
 - **Formula:** $(30 + 0.6 * x^{0.6})\%$, where x is time spent as your least used alignment this Reincarnation.
- **Perfectly Good**
 - **Old Requirement:** 333 hours time spent as Good All-time (13 days 21h).
 - **New Requirement:** 333 minutes time spent as Good All-time (5 hours and 33 minutes).
- **Spell Cataclysm**
 - **Old Requirement:** Have at least 4 spells active on tier 5 or higher.
 - **New Requirement:** Have at least 6 spells active on tier 2 or higher.
- **Stoic Resistance**
 - **Old Effect:** increase base clicking reward by +1e12.
 - **New Effect:** increase base clicking reward by +1e6.
- **That Excavated Quickly**
 - **Old Effect:** Increase the chance to find Faction Coins with Excavations by an additional 5%.
 - **New Effect:** Increase the base Faction Coins reward from Excavations by +250.
- **The Architect**
 - **Note:** Changed from Secret Trophy to Building Trophy.
 - **Old Requirement:** Build 125,000 of a single building tier.
 - **New Requirement:** Build 100,000 of a single building tier.
 - **New Effect:** Unlocks an upgrade of the same name.
 - **Cost:** Free
 - **Effect:** Increase Faction Coins found with excavations based on buildings built.
 - **Formula:** $(x^{0.8})\%$, where x is buildings built.
- **Uniformity**
 - **Old Requirement:** With at least 3 days time spent in this Reincarnation, have less than 1 minute of difference among time spent as Order, Chaos and Balance alignments in this Reincarnation.
 - **New Requirement:** With at least 1 day time spent in this Reincarnation, have less than 1 hour of difference among time spent as Order, Chaos and Balance alignments in this Requirement.
 - **Effect:** Increase the production of all buildings based on time spent as the least used 2nd alignment in this Reincarnation.
 - **Old Formula:** $(0.75 * x^{0.75})\%$, where x is time spent as the least used 2nd alignment this Reincarnation.
 - **New Formula:** $(50 + 0.5 * x^{0.5})\%$, where x is time spent as the least used 2nd alignment this Reincarnation.

Other

- Base Mana Regeneration is now 2 instead of 1.
- Starting Mana in all Eras is now 500 instead of the full 1000.
- Absent Ruler hidden upgrade series
 - **Old Requirement:** 12/24/36 consecutive hours spent offline.
 - **New Requirement:** 12/24/36 hours time spent offline All-time.
- Offline gains
 - Offline gains of Faction Coins, clicks made, mana produced, etc. are now separated. Effects may provide bonuses to one or more of them without affecting the rest.

Appendix

1. Lineage level cost table

Note: The levels shown are your current Lineage level (0 is for level 0->1)

Without Ancestral Hourglass

Ascension 1		Ascension 2		Ascension 3		Ascension 4	
0	1e14	25	2.80e36	50	3.08e68	75	1.43e88
1	1e15	26	3.74e37	51	1.71e69	76	5.31e88
2	1e16	27	4.99e38	52	9.50e69	77	1.97e89
3	1e17	28	6.65e39	53	5.27e70	78	7.29e89
4	1e18	29	8.87e40	54	2.93e71	79	2.70e90
5	1e19	30	1.18e42	55	1.63e72	80	1e91
6	1e20	31	1.58e43	56	9.03e72	81	3.70e91
7	1e21	32	2.10e44	57	5.01e73	82	1.37e92
8	1e22	33	2.80e45	58	2.78e74	83	5.08e92
9	1e23	34	3.74e46	59	1.54e75	84	1.88e93
10	1e24	35	4.99e47	60	8.58e75	85	6.98e93
11	1e25	36	6.65e48	61	4.76e76	86	2.59e94
12	1e26	37	8.87e49	62	2.64e77	87	9.58e94
13	1e27	38	1.18e51	63	1.47e78	88	3.55e95
14	1e28	39	1.58e52	64	8.15e78	89	1.31e96
15	1e29	40	2.10e53	65	4.52e79	90	4.87e96
16	1e30	41	2.80e54	66	2.51e80	91	1.80e97
17	1e31	42	3.74e55	67	1.39e81	92	6.68e97
18	1e32	43	4.99e56	68	7.74e81	93	2.48e98
19	1e33	44	6.65e57	69	4.30e82	94	9.17e98
20	1e34	45	8.87e58	70	2.39e83	95	3.40e99
21	1e35	46	1.18e60	71	1.33e84	96	1.26e100
22	1e36	47	1.58e61	72	7.36e84	97	4.66e100
23	1e37	48	2.10e62	73	4.08e85	98	1.73e101
24	1e38	49	2.80e63	74	2.27e86	99	6.40e101

With Ancestral Hourglass - Assuming you are 30 Reincarnations into the Ascension

Ascension 1		Ascension 2		Ascension 3		Ascension 4	
0	1e14	25	2.20e34	50	5.25e60	75	4.22e73
1	1e15	26	2.52e35	51	2.40e61	76	1.26e74
2	1e16	27	2.90e36	52	1.10e62	77	3.76e74
3	1e17	28	3.33e37	53	5.01e62	78	1.12e75

4	1e18	29	3.82e38	54	2.29e63	79	3.35e75
5	1e19	30	4.38e39	55	1.05e64	80	1e76
6	1e20	31	5.03e40	56	4.79e64	81	2.99e76
7	1e21	32	5.78e41	57	2.19e65	82	8.91e76
8	1e22	33	6.63e42	58	1e66	83	2.66e77
9	1e23	34	7.62e43	59	4.57e66	84	7.94e77
10	1e24	35	8.75e44	60	2.09e67	85	2.37e78
11	1e25	36	1e46	61	9.55e67	86	7.08e78
12	1e26	37	1.15e47	62	4.37e68	87	2.11e79
13	1e27	38	1.32e48	63	2e69	88	6.31e79
14	1e28	39	1.52e49	64	9.12e69	89	1.88e80
15	1e29	40	1.75e50	65	4.17e70	90	5.62e80
16	1e30	41	2e51	66	1.91e71	91	1.68e81
17	1e31	42	2.30e52	67	8.71e71	92	5.01e81
18	1e32	43	2.64e53	68	3.98e72	93	1.50e82
19	1e33	44	3.03e54	69	1.82e73	94	4.47e82
20	1e34	45	3.48e55	70	8.32e73	95	1.33e83
21	1e35	46	4e56	71	3.80e74	96	3.98e83
22	1e36	47	4.59e57	72	1.74e75	97	1.19e84
23	1e37	48	5.27e58	73	7.94e75	98	3.55e84
24	1e38	49	6.05e59	74	3.63e76	99	1.06e85

2. Lineage Perks unlock tables

Sorted by faction:

	Perk 1	Perk 2	Perk 3	Perk 4	Perk 5	Perk 6
Fairy	R69 L9	R82 L22	R110 L28	R142 L44	R176 L59	R208 L72
Elf	R62 L2	R76 L16	R124 L35	R134 L40	R160 L51	R200 L68
Angel	R68 L8	R84 L24	R112 L29	R150 L48	R170 L56	R212 L74
Goblin	R70 L10	R74 L14	R106 L26	R148 L47	R172 L57	R198 L67
Undead	R72 L12	R75 L15	R108 L27	R146 L46	R182 L62	R202 L69
Demon	R67 L7	R78 L18	R126 L36	R130 L38	R168 L55	R196 L66
Titan	R63 L3	R83 L23	R122 L34	R136 L41	R162 L52	R190 L63
Druid	R65 L5	R80 L20	R128 L37	R138 L42	R164 L53	R194 L65
Faceless	R64 L4	R77 L17	R114 L30	R152 L49	R180 L61	R192 L64
Dwarf	R66 L6	R73 L13	R120 L33	R140 L43	R174 L58	R204 L70
Drow	R61 L1	R79 L19	R118 L32	R132 L39	R166 L54	R210 L73
Dragon	R71 L11	R81 L21	R116 L31	R144 L45	R178 L60	R206 L71
Archon	R130 L10	R130 L25	R130 L35	R151 L48	R179 L60	R205 L70
Djinn	R130 L10	R130 L25	R130 L35	R153 L49	R169 L55	R199 L67
Makers	R130 L10	R130 L25	R130 L35	R155 L50	R181 L58	R211 L73

Sorted by Reincarnation:

Sorted by Lineage Level:

Rein.	Perks
61	Drow 1
62	Elf 1
63	Titan 1
64	Faceless 1
65	Druid 1
66	Dwarf 1
67	Demon 1
68	Angel 1
69	Fairy 1
70	Goblin 1
71	Dragon 1
72	Undead 1
73	Dwarf 2
74	Goblin 2
75	Undead 2
76	Elf 2
77	Faceless 2
78	Demon 2
79	Drow 2
80	Druid 2
81	Dragon 2
82	Fairy 2
83	Titan 2
84	Angel 2
106	Goblin 3
108	Undead 3
110	Fairy 3
112	Angel 3
114	Faceless 3
116	Dragon 3
118	Drow 3
120	Dwarf 3
122	Titan 3
124	Elf 3
126	Demon 3
128	Druid 3
130	Demon 4, Archon, Djinn, Makers 3
132	Drow 4

Lvl.	Perks
1	Drow 1
2	Elf 1
3	Titan 1
4	Faceless 1
5	Druid 1
6	Dwarf 1
7	Demon 1
8	Angel 1
9	Fairy 1
10	Goblin, Archon, Djinn, Makers 1
11	Dragon 1
12	Undead 1
13	Dwarf 2
14	Goblin 2
15	Undead 2
16	Elf 2
17	Faceless 2
18	Demon 2
19	Drow 2
20	Druid 2
21	Dragon 2
22	Fairy 2
23	Titan 2
24	Angel 2
25	Archon, Djinn, Makers 2
26	Goblin 3
27	Undead 3
28	Fairy 3
29	Angel 3
30	Faceless 3
31	Dragon 3
32	Drow 3
33	Dwarf 3
34	Titan 3
35	Elf, Archon, Djinn, Makers 3
36	Demon 3
37	Druid 3
38	Demon 4

134	Elf 4
136	Titan 4
138	Druid 4
140	Dwarf 4
142	Fairy 4
144	Dragon 4
146	Undead 4
148	Goblin 4
150	Angel 4
151	Archon 4
152	Faceless 4
153	Djinn 4
155	Makers 4
160	Elf 5
162	Titan 5
164	Druid 5
166	Drow 5
168	Demon 5
169	Djinn 5
170	Angel 5
172	Goblin 5
174	Dwarf 5
176	Fairy 5
178	Dragon 5
179	Archon 5
180	Faceless 5
181	Makers 5
182	Undead 5
190	Titan 6
192	Faceless 6
194	Druid 6
196	Demon 6
198	Goblin 6
199	Djinn 6
200	Elf 6
202	Undead 6
204	Dwarf 6
205	Archon 6
206	Dragon 6

39	Drow 4
40	Elf 4
41	Titan 4
42	Druid 4
43	Dwarf 4
44	Fairy 4
45	Dragon 4
46	Undead 4
47	Goblin 4
48	Angel, Archon 4
49	Faceless, Djinn 4
50	Makers 4
51	Elf 5
52	Titan 5
53	Druid 5
54	Drow 5
55	Demon, Djinn 5
56	Angel 5
57	Goblin 5
58	Dwarf, Makers 5
59	Fairy 5
60	Dragon, Archon 5
61	Faceless 5
62	Undead 5
63	Titan 6
64	Faceless 6
65	Druid 6
66	Demon 6
67	Goblin, Djinn 6
68	Elf 6
69	Undead 6
70	Dwarf, Archon 6
71	Dragon 6
72	Fairy 6
73	Drow, Makers 6
74	Angel 6

208	Fairy 6
210	Drow 6
211	Makers 6
212	Angel 6

3. Primal Balance table

Extra targets					
	Asc. 0	Asc. 1	Asc. 2	Asc. 3	Asc. 4
1	100,000	100,000	100,000	100,000	100,000
2	3,20e6	1,81e7	1,02e8	5,79e8	3,28e9
3	2,43e7	3,79e8	5,90e9	9,20e10	1,43e12
4	1,02e8	3,28e9	1,05e11	3,36e12	1,07e14
5	3,13e8	1,75e10	9,77e11	5,46e13	3,05e15
6	7,78e8	6,86e10	6,05e12	5,33e14	4,70e16
7	1,68e9	2,18e11	2,82e13	3,66e15	4,75e17
8	3,28e9	5,93e11	1,07e14	1,94e16	3,52e18
9	5,90e9	1,43e12	3,49e14	8,47e16	2,06e19
10	1,00e10	3,16e12	1,00e15	3,16e17	1,00e20

4. Buildings & Unique Buildings alignments

- Upgrade’s alignment:** An upgrade (or building, spell, research, etc.) belongs to an alignment if it is only purchasable after you have purchased the Proof of that alignment.
 - Example:**
 - “Demon Trade Treaty” is an Evil upgrade (since it requires “Proof of Evil Deed”) in Ascension 0 and an Evil + Chaos upgrade in Ascension 2.
 - “Archon Trade Treaty” is an Order upgrade. It is neither a Good, Evil nor Neutral upgrade because it can be purchased in all said alignments.
- Building’s alignment:** Buildings of tiers from 4 to 10 belong to the 1st alignment of their respective Proofs.
 - Buildings by default do not have a 2nd alignment unless they are upgraded into a Unique Building.
 - Farms, Inns, Blacksmiths and Hall of Legends are **True Neutral** (or “default” or “unaligned”) buildings. True Neutral counts as Neutral for most purposes, but some effects can target or affect True Neutral buildings specifically such as D13125.
- Unique Building’s alignment:** Unique Buildings can have their alignment checked in 3 main ways:
 - Alignments matching building:** By default, Unique Buildings inherit the 1st alignment of the building they replace, then if it is unlocked in Ascension 2, the corresponding 2nd alignment is given. This check is used for most effects that target or affect all buildings of a specific alignment, such as E80 or ARC1.
 - Alignments matching faction:** This check uses the alignment(s) of the faction the Unique Building belongs to. This check is used for W13500.
 - Alignments matching upgrade:** This check uses the alignment(s) of the Unique Building’s upgrade (the upgrade of the same name that gives the Unique Building and increases its production). This is almost identical to alignments matching faction, the difference being the first Unique-Building will not be given the 2nd alignment. This check is used for C200.

Full Unique Buildings alignment table			Matching building		Matching upgrade		Matching faction	
Faction	Name	Tier	1st	2nd	1st	2nd	1st	2nd
Fairy	Enchanted Field	1	Neutral	-	Good	-	Good	Chaos
	Swarming Tower	6	Good	Chaos		Chaos		
Elven	Training Ground	4	Good	-	Good	-	Good	Balance
	Arboreal City	8		Balance		Balance		

Full Unique Buildings alignment table			Matching building		Matching upgrade		Matching faction	
Faction	Name	Tier	1st	2nd	1st	2nd	1st	2nd
Angel	Heaven's Domain	10	Good	-	Good	-	Good	Order
	Holy Site	7		Order		Order		
Undead	Undercity	8	Evil	-	Evil	-	Evil	Order
	Flesh Workshop	5		Order		Order		
Goblin	Goblin Bank	6	Evil	-	Evil	-	Evil	Balance
	Slave Market	4		Balance		Balance		
Demon	Infernal Realm	10	Evil	-	Evil	-	Evil	Chaos
	Burning Abyss	11	Neutral	Chaos		Chaos		
Titan	Olympian Hall	11	Neutral	-	Neutral	-	Neutral	Order
	Mountain Palace	4		Order		Order		
Druid	Stonehenge	5	Neutral	-	Neutral	-	Neutral	Balance
	Ziggurat	10		Balance		Balance		
Faceless	Sunken Cities	8	Neutral	-	Neutral	-	Neutral	Chaos
	Forbidden Library	7		Chaos		Chaos		
Dwarven	Dwarven Forge	3	Neutral	-	Good	-	Good	-
	High Baston	9	Good					
Drow	Spider Sanctuary	7	Evil	-	Evil	-	Evil	-
	Brothel	2	Neutral					
Dragon	Wyrms's Den	9	Neutral	-	Neutral	-	Neutral	-
	Dragon Pasture	1						
Mercenary	Mercenary Camp	5	Good	-	Good	-	Good	-
	Tyrant Garrison	9	Evil		Evil		Evil	
	Freemason's Hall	2	Neutral		Neutral		Neutral	
Archon	Nexus	6	G/E/N	Order	G/E/N	Order	-	Order
Djinn	Pavilion	4	G/E/N	Chaos	G/E/N	Chaos		Chaos
Makers	Hall of Origination	11	Neutral	Balance	Neutral	Balance		Balance

5. Spell Tiers cost table

Spell	Coins	F. Coins	Spell	Coins	F. Coins	Spell	Coins	F. Coins
Call To Arms	5.1e52	0	Goblin's Greed	5.7e58	1e10	Dragon's Breath	6.9e70	1e15
Holy Light	5.4e55	1e9	Night Time	5.7e58	1e10	Temporal Flux	7.5e76	1e18
Blood Frenzy	5.4e55	1e9	Hellfire Blast	5.7e58	1e10	Maelstrom	7.5e76	1e18
Gem Grinder	5.7e58	5e9	Lightning Strike	6e61	5e10	All Creation	7.5e76	1e18
Spiritual Surge	7e71	1e13	Grand Balance	6e61	5e10	Precognition	1.2e122	1e24
Fairy Chanting	5.7e58	1e10	Brainwave	6e61	5e10	Limited Wish	1.2e122	1e24
Moon Blessing	5.7e58	1e10	Diamond Pickaxe	6.9e70	1e12	Infinite Spiral	1.2e122	1e24
God's Hand	5.7e58	1e10	Combo Strike	6.9e70	1e12			

6. Spell Identities

- Spells’ identities are essentially tags the game placed onto spells to categorize or figure out if effects affecting a subset of spells should apply to them. For example: Spells tagged as “Evil spells” will benefit from Demon Lineage Perk 1.

Name	Identities
Tax Collection	Tax Collection & Variants spell, Common spell
Share Benefits	Tax Collection & Variants spell, Partial Faction spell
Reap Interests	Tax Collection & Variants spell, Partial Faction spell
Appraisal Vantage	Tax Collection & Variants spell, Partial Faction spell
Call to Arm	Common spell
Spiritual Surge	Common spell
Holy Light	Alignment spell, Good spell
Fairy Chanting	Good spell, Chaos spell, Faction spell
Moon Blessing	Good spell, Balance spell, Faction spell
God’s Hand	Good spell, Order spell, Faction spell
Diamond Pickaxe	Good spell, Faction spell
Blood Frenzy	Alignment spell, Evil spell
Goblin’s Greed	Evil spell, Balance spell, Faction spell
Night Time	Evil spell, Order spell, Faction spell
Hellfire Blast	Evil spell, Chaos spell, Faction spell
Combo Strike	Evil spell, Faction spell
Gem Grinder	Alignment spell, Neutral spell
Lightning Strike	Neutral spell, Order spell, Faction spell
Grand Balance	Neutral spell, Balance spell, Faction spell
Brainwave	Neutral spell, Chaos spell, Faction spell
Dragon’s Breath	Neutral spell, Faction spell
Temporal Flux	Alignment spell, Order spell
Precognition	Order spell, Faction spell
Maelstrom	Alignment spell, Chaos spell
Limited Wish	Chaos spell, Faction spell
Catalyst	Chaos spell, Limited spell
Chaos Madness	Chaos spell, Limited spell
Twisting Nether	Chaos spell. Partial Faction spell*
All Creation	Alignment spell, Balance spell
Infinite Spiral	Balance spell, Faction spell
Heatwave	Seasonal spell, Partial Faction spell
Hailstorm	Seasonal spell, Partial Faction spell
Cannibalize	Seasonal spell
Shadow Embrace	Seasonal spell
Wail of the Banshee	Seasonal spell

- *: Only if obtained via Fairy-Angel Legacy Combo.
 - Event cosmetics or replacements (such as Call to Love) do not change a spell’s identities.
- Limited spells
 - Limited spells are spells that are only available to a specific faction but do not count as Faction spells.

- **Partial Faction spells**
 - Partial Faction spells are Limited spells that count as Faction spells for the purpose of stats tracking, but do not receive the bonuses that affect Faction spells.
- **Notable behaviours**
 - **Spells cast** and **Spells activity time** (this Era, this Reincarnation, or All-time) stats ignore Limited and Seasonal spells.
 - **Faction spells cast** and **Faction spells activity time** (this Era, this Reincarnation, or All-time) stats count Partial Faction spells.
 - Effects that affect or target Faction spells, including but not limited to increasing the duration of, reducing the mana cost / Tiers cost scaling of, or giving additional Tier(s) to Faction spells, all ignore Partial Faction spells **except D330**.

7. Miscellaneous mechanics & synergies

- **Call to Arms building count**
 - Effects that only make a subset of buildings (a specific building, only Unique Buildings, only Neutral buildings, etc.) count more for Call to Arms are separated from other sources and their extra buildings are not affected by effects that make all buildings count more for Call to Arms.
 - Overall formula for Call to Arms' building count:

$$\text{CtA_B} = [\text{B}] * \text{S435} * \text{W180} * \text{Good_Warcry} + [\text{UB}] * \text{C11875} + [\text{UB}] * \text{R150_Power} + [\text{WB}] * \text{C225}$$
 - Where [B] is total buildings built, [UB] is Unique Buildings built, [WB] is Training Ground (Warrior Barracks) built, with all "buildings count more" effects included.
- **Elven Luck**
 - Every unique autoclick source, if not already guaranteeing Elven Luck triggers, has a chance to trigger Elven Luck exactly once every second, regardless of its autoclick power.
 - Effects that increase Elven Luck chance for autoclicks also increase Elven Luck chance for manual clicks by +1%.
 - Elven Luck's base production, for both autoclicks and manual clicks, is equal to the production (per second) of all buildings plus the production of **one** assistant.
 - **Assistants also have a chance to trigger Elven Luck**, with the same chance as autoclicks but the base production equal to the production of **all** assistants instead.
 - This is due to assistants generating Coins by simulating one manual click every second, which can trigger Elven Luck.
- **Persistency synergies**
 - Different persistencies of the same stat, if they exist, apply in the following order:

$$\text{Total_count} = (\text{A_base} * \text{M_base} * \text{M_temp} + \text{A_temp}) * \text{M_illus} + \text{A_illus}$$
 - Where:
 - A_: the sum of all additive sources of this persistence.
 - M_: the product of all multiplicative sources of this persistence.
 - _base: base persistence.
 - _temp: temporary persistence.
 - _illus: illusory persistence.

Editors
Cyden, Gull, Regulus
& other testers.

Realm Grinder Update 4.3.1

All changes and additions

April 14th, 2025

System Changes

- Buy All Buildings and Buy All Upgrades buttons now appear at 1,000 Gems instead of 1e9 (1 B) Gems.

Balance Changes

- **A270** (Explosives)
 - **Old Effect:** Increase the production of your most productive building based on excavation depth.
 - **New Effect:** Increase the production of the building tier affected by the highest amount of spell effects based on excavation depth. All tied buildings receive the bonus.
- **Dragon's Breath**
 - **Removed Effect:** Dragon's Breath Tier upgrades no longer increase offline production.

Bug Fixes

- Fixed Spark of Life, Lantern of Guidance, Primal Leaf, Dwarven Anvil, Eye of the Dragon, Excavated Mirage, Factory, Battlefield and Mana Loom artifacts having uncleaned logs. Now they are properly in natural logs.
- Fixed an error in the log conversion of Gem Power's Faction Coin find chance bonus's formula. Now it is properly in natural log.
- Fixed a potential INF in TT6, ANC3, A11375 and Lantern of Guidance artifact's formulas.
- Fixed several autoclick sources not working properly.
- Fixed DM2 & DM4 usability still being restricted to Evil.
- Fixed AN4 still targeting Cathedral when adapted to other alignments.
- Fixed all Infinite Spiral effects exponent being 1% stronger at all time due to an error in MKCR's internal checks.
- Fixed Self-Tier spells (Share Benefits & Twisting Nether) Tier 1 having no effect, resulting in those spells effectively having one less Tier than intended.
- Fixed DWC5 requiring Combo Strike casts instead of Combo Strike counters.
- Fixed TTP6 being permanently stuck at 1.1% bonus.
- Fixed Mercenary Spirit asking for unobtainable spells in certain game stages.

Realm Grinder Update 4.3.2

All changes and additions

May 13th, 2025

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System Changes

Other

- Dragon Unlock Stages are no longer invisible until you have reached their Reincarnation requirements, instead the next Stage is now visible immediately after the current Stage is finished.

Balance Changes

General progression & Ascension

Ascensions

- **Ascension 4**
 - **Gem's bonus to production**
 - **Old Formula:** $(B * G)\%$, where B is production bonus from Gems and G is Gems owned.
 - **New Formula:** $((B * G) ^ 0.9)\%$, where B is production bonus from Gems and G is Gems owned.
 - **Note:** This only applies to overall production bonus from Gem to Coins production via Gem Power. Effects that target or affect production bonus from Gems, or Gems owned, are unaffected. Gems - Coins conversion is unaffected.
 - The following upgrades are removed starting from Ascension 4:
 - Assistants upgrade series
 - Alignment upgrade series
 - Wall fragment series
 - Gem potency series
 - Sun Force
 - Leet, Unitary, Building Hater, Lucky Neutral, Perfectly Good, Diabolical Evil, Rewind, Speed Run, Equality, ghokohl snod, Suggestion Master, Triple Weirdness, Scarab of Fortune, Fossilized Rodent, Voodoo Doll & Fortune Teller Machine
 - **New:** Expert Researcher, Prestige Challenger, Astral Challenger, For Science!, Beard Carpet, Uniformity

Reincarnation Power

- **Note:** All 'R' variables in Reincarnation Power formulas start counting from the respective Ascension the Power is unlocked in.
- **Reincarnation 107 Power**
 - **Effect:** Increase the production of Unique Buildings based on the difference of time spent as their respective faction against your most used faction in this Reincarnation.
 - **Old Formula:** $(0.15 * (x - y) ^ 0.75)\%$, where x is time spent as your most used Faction and y is time spent as the Faction(s) the Unique Building(s) belong to this Reincarnation.
 - **New Formula:** $(50 + 0.15 * (x - y) ^ 0.85)\%$, where x is time spent as your most used Faction and y is time spent as the Factions the Unique Buildings belong to this Reincarnation.

- **Reincarnation 120 Power**
 - **Effect:** Increase the production of all buildings.
 - **Old Formula:** $(10 * R)\%$
 - **New Formula:** $(25 * R)\%$

Faction Upgrades

Dragon

- **DG11's White Breath effect merges with DG3.**
- **DG3** (Imposing Presence)
 - **Old Effect:** While White Breath is active, multiplicatively increase assistants by 75%.
 - **New Effect:** While White Breath is active, multiplicatively increase assistants based on time spent as Dragon in this Era.
 - **Formula:** $(75 + 1.25 * \ln(1 + x) ^ 1.25)\%$, where x is time spent as Dragon this Era.
- **DG11** (Wyrms Rest)
 - **Removed Effect:** White Breath also multiplicatively increases assistants based on time spent as Dragon in this Era.
 - **Formula:** $(1.25 * \ln(1 + x) ^ 1.25)\%$, where x is time spent as Dragon this Era.

Makers

- **MK10** (Valuable Antiquity)
 - **Effect:** Multiplicatively increase Triggered Tax Collections based on artifacts found.
 - **Old Formula:** $(x ^ 0.7)\%$, where x is artifacts found.
 - **New Formula:** $(0.7 * x ^ 0.7)\%$, where x is artifacts found.
- **MK12** (Reality Marble)
 - **Effect:** Artifacts count more based on clicks made in this Reincarnation
 - **Old Formula:** $(x ^ 0.25)\%$, where x is clicks made this Reincarnation.
 - **New Formula:** $(0.5 * x ^ 0.25)\%$, where x is clicks made this Reincarnation.

Faction Costs

- **Ascension 4 Base Faction Upgrades Coin Costs**
 - Base cost reduced from 1e51 (1 Sxd) to 1e48 (1 Qid)
- **Ascension 4 Astral Faction Upgrades Coin Costs**
 - Base cost increased from 1e186 (1 USxg) to 1e189 (1 DSxg)

Heritages

Advanced Heritages

- **Advanced Dragon Heritage**
 - **Effect:** Increase triggered Tax Collections based on Artifacts found.
 - **Old Formula:** $+(1 + 0.05 * \ln(1 + x) ^ 1.25)$, where x is Artifacts found.
 - **New Formula:** $+(1 + 0.05 * \ln(1 + x) ^ 1.15)$, where x is Artifacts found.

Spells & Spell Upgrades

- **Dragon's Breath**
 - **Green Breath**
 - **Effect:** Increase the production of all buildings based on spells cast in this Era. Higher bonuses are provided to lower building tiers.
 - **Old Formula:** $(0.01 * x ^ 0.4 * (11 - T) ^ 5)\%$, where x is spells cast this Era.
 - **New Formula:** $(0.000001 * \ln(1 + x) ^ 6 * (11 - T) ^ 5)\%$, where x is spells cast this Era.
- **Share Benefits**
 - **Base Tax Collection worth:** Reduced from 120 to 30 seconds.
 - **Effect:** Increase the production of all buildings and multiplicatively increase Faction Coin find chance based on Share Benefits Tier.
 - **Old Production Formula:** $((120 + 1.25 * \ln(1 + x) ^ 1.25) ^ T)\%$, where x is Tax Collection worth and T is Share Benefits Tier.
 - **New Production Formula:** $((80 + 1.25 * \ln(1 + x) ^ 1.25) ^ T)\%$, where x is Tax Collection worth and T is Share Benefits Tier.
 - **Old Faction Coins Formula:** $(120 ^ (0.25 * T))\%$, where T is Share Benefits Tier.
 - **New Faction Coins Formula:** $(100 * 3.5 ^ T)\%$, where T is Share Benefits Tier.
 - **Effect:** While Share Benefits is active, produce Tax Collection casts per second based on Maximum Mana, Tax Collection worth and triggered Tax Collection.
 - **Old Formula:** $+(0.001 * tTC * T * (MM * TCw) ^ 0.7)$, where tTC is triggered Tax Collections, T is Share Benefits tier, MM is Maximum Mana and TCw is Tax Collection worth.
 - **New Formula:** $+(0.00001 * tTC * T * MM * TCw ^ 0.5)$, where tTC is triggered Tax Collections, T is Share Benefits tier, MM is Maximum Mana and TCw is Tax Collection worth.
 - **Effect:** While Share Benefits is active, increases mana produced stat every second based on Mana Regeneration and Maximum Mana.

- **Old Formula:** $+(\min(x, y) ^ 0.9)$, where x is Mana Regeneration and y is Maximum Mana.
- **New Formula:** $+(\min(x, y))$, where x is Mana Regeneration and y is Maximum Mana.

Challenges

Drow

- **Drow Challenge 5** (Shadow Mirage)
 - **Effect:** Multiplicatively increase triggered Tax Collections based on Royal Exchange bonus.
 - **Old Formula:** $(5 + 2.5 * x ^ 0.25)\%$, where x is Royal Exchange bonus.
 - **New Formula:** $(5 + 2 * x ^ 0.2)\%$, where x is Royal Exchange bonus.

Unique Buildings

- **Pavilion**
 - **Old Unlock Requirement:** 4 days of Chaos spells activity time this Era combined.
 - **New Unlock Requirement:** 1 day of Chaos spells activity time this Era combined.

Researches

Spellcraft

- **S305** (Mesmerization)
 - **Old Requirement:** 2 days time spent as Faceless All-time.
 - **New Requirement:** 5 hours time spent as Faceless All-time.
- **S590** (Trickery)
 - **Effect:** Increase the production of Neutral buildings based on Maximum Mana.
 - **Old Formula:** $(0.5 * x ^ 0.95)\%$, where x is Maximum Mana.
 - **New Formula:** $(0.5 * x ^ 0.9)\%$, where x is Maximum Mana.

Craftsmanship

- **C305** (Golemcraft)
 - **Old Requirement:** 2 days time spent as Titan All-time.
 - **New Requirement:** 5 hours time spent as Titan All-time.

Divine

- **D11125** (Viriditas)
 - **Effect:** Lineage levels count more based on Artifacts found.
 - **Old Formula:** $(x ^ 0.75)\%$, where x is Artifacts found.
 - **New Formula:** $(x ^ 0.7)\%$, where x is Artifacts found.

Economics

- **E410** (Marketing)
 - **Old Effect:** Increase the production of all other buildings by 75% per Dwarven Forge (Blacksmith) built.
 - **New Effect:** Increase the production of all other buildings by 25% per Dwarven Forge built.
- **E1425** (Rarity)
 - **Old Requirement:** 2 hours time spent each as Titan, Druid and Faceless All-time.
 - **New Requirement:** 8 hours time spent each as Titan, Druid and Faceless All-time.
- **E5375** (Whipround)
 - **Effect:** Additively and multiplicatively increase Royal Exchange bonus based on Tax Collection casts in this Era.
 - **Old Formula:** $(0.85 * x ^ 0.15)\%$, where x is Tax collection casts this Era.
 - **New Formula:** $(0.5 * x ^ 0.15)\%$, where x is Tax collection casts this Era.

Alchemy

- **A305** (Engraving)
 - **Old Requirement:** 2 days time spent as Druid All-time.
 - **New Requirement:** 5 hours time spent as Druid All-time.

Bloodlines

- **Faceless Bloodline**
 - **Effect:** Increase Maximum Mana based on mana produced in this Era.
 - **Old Formula:** $+(3.5 * \ln(1 + x) ^ 3.5)$, where x is mana produced this Era.
 - **New Formula:** $+(0.5 * \ln(1 + x) ^ 4)$, where x is mana produced this Era.
- **Makers Bloodline**
 - **Effect:** Increase your Set's power based on Faction Coins found this Era.
 - **Old Formula:** $(0.25 * \ln(1 + x) ^ 1.5)\%$, where x is Faction Coins found this Era.
 - **New Formula:** $(0.25 * \ln(1 + x) ^ 1.35)\%$, where x is Faction Coins found this Era.

Lineages & Lineage Perks

Dwarven

- **Dwarven Perk 3**
 - **Old Effect:** Excavations and Artifacts count more based on Unique Buildings built.
 - **New Effect:** Excavations count more based on Unique Buildings built.

Makers

- **Makers Lineage**
 - **Old Effect:** Excavations, Artifacts and Trophies count 4% more per Lineage level.
 - **New Effect:** Excavations, Artifacts and Trophies count 3% more per Lineage level.
- **Makers Perk 4**
 - **Old Effect:** While Infinite Spiral is active, Increase the production of all buildings by a cumulative 3% per second, up to its maximum duration.
 - **New Effect:** While Infinite Spiral is active, Increase the production of all buildings by a cumulative 2% per second, up to its maximum duration.

Artifacts

Lore Artifacts

- **Mythos**
 - **Old Chance:** $(x / 4,320,000)\%$, where x is the activity time of your least used spell in this Reincarnation.
 - **New Chance:** $(x / 2,160,000)\%$, where x is the activity time of your least used spell in this Reincarnation.

Artifact Upgrades

- **Lantern of Guidance, Oil Lamp, Spark of Life** (2nd alignment Lore Artifacts)
 - **Old Cost:** 1e140 (100 Qiqag) Coins
 - **New Cost:** 1e136 (10 Qaqag) Coins
 - **Old Effect:** Increase the production of all buildings by 125%.
 - **New Effect:** Increase the production of all buildings based on Mana Regeneration, Maximum Mana and Faction Coin find chance respectively. Bonus increased while playing as the corresponding alignment's faction.
 - **Note:** Bonus is raised to the power of 1.5.
- **Lantern of Guidance**
 - **Old Effect:** Increase the production of all buildings by 125%.
 - **New Effect:** Increase the production of all buildings based on Mana Regeneration. Bonus increased while playing as an Order faction.
 - **Formula:** $(9 * x^{0.2})\%$, where x is Mana Regeneration.
 - **Improved Formula:** $(27 * x^{0.3})\%$, where x is Mana Regeneration.
- **Oil Lamp**
 - **Old Effect:** Increase the production of all buildings by 125%.
 - **New Effect:** Increase the production of all buildings based on Maximum Mana. Bonus increased while playing as a Chaos faction.
 - **Formula:** $(4 * x^{0.2})\%$, where x is Maximum Mana.
 - **Improved Formula:** $(8 * x^{0.3})\%$, where x is Maximum Mana.
- **Spark of Life**
 - **Old Effect:** Increase the production of all buildings by 125%.
 - **New Effect:** Increase the production of all buildings based on Faction Coin find chance. Bonus increased while playing as a Balance faction.
 - **Formula:** $(x^{0.2})\%$, where x is Faction Coin find chance.
 - **Improved Formula:** $(x^{0.3})\%$, where x is Faction Coin find chance.

Legacies & Legacy Combos

Legacies

- **Legacy Coin Cost:**
 - **Old Formula:** $(1e72 * 1,000^{(L * (L - 1))})$, where L is current Legacy container.
 - **New Formula:** $(1e39 * 1,000^{(0.5 * (L + 2) * (L + 3))})$, where L is current Legacy container.

Legacies	1st	2nd	3rd	4th
Old	1e72	1e78	1e90	1e108
New	1e57	1e69	1e84	1e102

- **Prestige Legacies Cost Multiplier:** Increased from 1e63 to 1e79 more expensive than Base Factions Legacies.
- **Legacy Faction Coin Cost:**
 - **Old Formula:** $(1e30 * 1,000^{(0.5 * L * (L - 1))})$, where L is current Legacy container.
 - **New Formula:** $(1e12 * 1e9^L)$, where L is current Legacy container.

Legacies	1st	2nd	3rd	4th
Old	1e30	1e33	1e39	1e48
New	1e21	1e30	1e39	1e48

- **Prestige Legacies Cost Multiplier:** Increased from 1e15 to 1e24 more expensive than Base Factions Legacies.

Legacy Combos

- **Fairy-Elven** (Mystic Forest)
 - **Effect:** Increase the production of all buildings based on assistants owned.
 - **Old Formula:** $(2 * \ln(1 + x) ^ 3)\%$, where x is assistants owned.
 - **New Formula:** $(2 * \ln(1 + x) ^ 2)\%$, where x is assistants owned.

Bug Fixes

- Beard Hair Artifact now correctly requires 2,000 Excavation depths.
- Dragon Perk 4 now correctly does not affect Green Breath.
- Green Breath now correctly says it is based on spells cast this Era.
- Goblin Perk 1 no longer makes upgrades such as Dragon Chaos Union not providing any bonus to Non-Unique Buildings.
- Research D13125 no longer makes Non-Unique Buildings built count becomes zero.
- Research A270 now correctly applies only to buildings you currently have instead of buildings from all 3 alignments.
- Reincarnation 220 power’s Faction Coin effect is no longer locked at Reincarnation 225+.
- Share Benefits now correctly produce the “mana produced” stat instead of the useless “mana spent” stat.
- Tooltip fixes:
 - Exchange Lord now correctly indicates that it is additive.
 - Fixed All Creation’s grammar.
 - Helden sterben nicht now correctly says "of a game session".
 - Limited Wish now lists the bonus for the production effect.

Realm Grinder Update 4.3.3

All changes and additions

July 2nd, 2025

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System Changes

Functionality / UI

Template

- **Add** and **Edit** functionality have been added to the Load Template Button.
 - Templates manually saved this way maintain their written order instead of the Faction order (Fairy -> Elven -> Angel -> etc.) like templates saved with the Save Template Button.
 - The Save Template Button can still be used to save the currently selected upgrades to a template.
- Template menus have been enlarged.

Balance Changes

Spells & Spell Upgrades

- **Limited Wish**
 - **Bug Fix:** Limited Wish no longer has the production and non-production formulas swapped by mistake. Formulas adjusted.
 - **Effect:** Multiplicatively Increase a random stat based on Limited Wish activity time and casts this Era.
 - **Old Production Formula:** $(50 + 5 * \ln(1 + x) ^ 1.75 * y ^ 0.25)\%$, where x is Limited Wish activity time this Era, y is a random number between 1 and Limited Wish casts this Era, rolled on cast.
 - **New Production Formula:** $(50 + 5 * \ln(1 + x) ^ 1.75 * y)\%$, where x is Limited Wish activity time this Era, y is a random number between 1 and Limited Wish casts this Era, rolled on cast.
 - **Old Non-Production Formula:** $(250 + 2.5 * \ln(1 + x) ^ 1.75 * y ^ 0.5)\%$, where x is Limited Wish activity time this Era, y is a random number between 1 and Limited Wish casts this Era, rolled on cast.
 - **New Non-Production Formula:** $(25 + 2.5 * \ln(1 + x) ^ 1.75 * y ^ 0.5)\%$, where x is Limited Wish activity time this Era, y is a random number between 1 and Limited Wish casts this Era, rolled on cast.

Bug Fixes

- All Unique Buildings now always give access to Research.
- Autocast Preset Buttons are now always visible on mobile.
- Basic autocast now correctly unlocks at 500,000 instead of 600,000 Mana produced.
- Blood Frenzy casted via Demon Bloodline now correctly apply spell effect to Aligned Buildings.
- Djinn Challenge 4 now rolls for a bonus immediately instead of after 88 seconds into the Era.
- Elven Perk 6, Faceless Perk 6, Research C520 and a few event upgrades no longer permanently apply their bonus.
- Fixed Goblin Perk 1 causing all buildings to always receive the Non-Unique Building bonus from Dragon Chaos Union.
- Fixed a bug where importing a save gives more Offline production than closing & reopening the game.
- Lineage Perks now check for your Reincarnation to become purchasable, even if the player has already unlocked the Perk(s) before 4.3.0.
- Mercenary Challenge 1 no longer prevents Reincarnation Powers 58 and 115 from functioning properly.
- Reincarnation menu now correctly states that the player will receive Reincarnation Power 58 and Reincarnation Power 220 on the previous Reincarnation.
- Reincarnation Power 58, 70 and 115 now apply their effect after the correct Reincarnation Power upgrade is bought instead of Reincarnation Power 1 (for Reincarnation 1 - 39).
- Remove AN5 's spell casts count effect that should have been removed in 4.3.0.
- Research S135 no longer applies its bonus twice.
- Research S180 is no longer 100 times stronger than intended.
- Research S11875 and F5750 unlock requirements now correctly ignore count more effects.
- Research D13125 no longer makes Non-Unique Buildings built count becomes zero, again.
- Research A50 now only apply its bonus while Mana Wasting, fixed a faulty multiplier conversion resulting in a much lower bonus than intended.
- Research A270 no longer affects buildings you don't have access to.

- Spell Tier upgrades now specify that you need the corresponding spell's activity time.
- Undead Perk 4 now correctly targets Night Time activity time this Reincarnation instead of this Ea.
- Tooltip fixes:
 - Dwarven Perk 3 no longer says it affects artifacts.
 - Elven Challenge Reward now says it increases the Elven Luck triggered "stat".
 - Fixed the Research panel's notification not appearing correctly.
 - Research D245 now lists its requisite researches.
 - Research W5625 now correctly indicates that it is additive.
 - Uniformity now says it is with at least 1 day time spent among the 2nd alignments.

Realm Grinder Update 4.3.4.0

All changes and additions

August 18th, 2025

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New Contents

Reincarnation Power

- **Note:** All 'R' variables in Reincarnation Powers' formula follow the new Ascension-based system.
- **Reincarnation 75 Power**
 - **Effect:** Mercenary gains 1 additional Research slot to facilities based on your current alignment.
 - Good: Spellcraft, Divine.
 - Evil: Economics, Warfare.
 - Neutral: Craftsmanship, Alchemy.

Balance Changes

Spells & Spell Upgrades

- **Share Benefits**
 - **Effect:** Increase the production of all buildings and multiplicatively increase Faction Coin find chance based on Share Benefits Tier.
 - **Old Production Formula:** $((80 + 1.25 * \ln(1 + x))^{1.25})^T\%$, where x is Tax Collection worth and T is Share Benefits Tier.
 - **New Production Formula:**
 - **Ascension 1:** $(100 * (80 + 1.6 * \ln(1 + x))^{1.6})^{((0.5 * (T + 1))^{0.9})}\%$, where x is Tax Collection worth and T is Share Benefits Tier.
 - **Ascension 3:** $((80 + 1.6 * \ln(1 + x))^{1.6})^{((0.5 * (T + 1))^{0.9})}\%$, where x is Tax Collection worth and T is Share Benefits Tier.
 - **Note:** No longer suffer from Ascension penalty.
 - **Old Faction Coins Formula:** $(100 * 3.5^T)\%$, where T is Share Benefits Tier.
 - **New Faction Coins Formula:** $(100 * (3 + 0.1 * \ln(1 + x))^T)\%$, where x is triggered Tax Collection and T is Share Benefits Tier.
- **Reap Interests**
 - **Effect:** Multiply Reap Interests worth based on Reap Interests casts in this Era.
 - **Old Formula:** $(\ln(1 + x))^3$, where x is Reap Interests casts this Era.
 - **New Formula:** $(\ln(1 + x))^4$, where x is Reap Interests casts this Era.
- **Appraisal Vantage**
 - **Effect:** Generates additional Faction Coins per cast.
 - **Old Formula:** $(x * z^{1.275})$, where x is assistants owned and z is Faction Coin find chance.
 - **New Formula:** $(x * y * z^{1.25})$, where x is assistants owned, y is Tax Collection worth and z is Faction Coin find chance.

Challenges

Dragon

- **Dragon Challenge 4** (Draconstellation)
 - **Old Challenge:** Have at least 3 Dragon's Breaths active with 8,000 Iron Strongholds purchased.
 - **New Challenge:** Have at least 3 Dragon's Breaths active with 10,000 Iron Strongholds.
- **Dragon Challenge 6** (Dracomet Vault)
 - **Old Challenge:** Have at least 2.5e18 Faction Coins, 1e141 Coins, 90,000 Buildings built, 2e10 Mana produced, 7,500 Excavations depth, 6,000 assistants, 300,000 Maximum Mana and 175,000 Mana Regeneration.
 - **New Effect:** Have at least 1e25 Faction Coins, 1e150 Coins, 120,000 Buildings built, 2e10 Mana produced, 9,000 Excavations depth, 1e7 assistants, 1e7 Maximum Mana and 2e7 Mana Regeneration.

Archon

- **Archon Challenge 3** (Titanomancy)
 - **Old Challenge:** Have a Royal Exchange bonus of at least 15,000% within 5 minutes of a new Era.
 - **New Challenge:** Have a Royal Exchange bonus of at least 1e7% within 5 minutes of a new Era.
- **Archon Challenge 5** (Power Overwhelming)
 - **Old Challenge:** Have a Precognition duration of at least 1 day, with a minimum of 315% bonus.
 - **New Challenge:** Have a Precognition duration of at least 1 day, with a minimum of 650% bonus.

Djinn

- **Djinn Challenge 3** (Identity Shaper)
 - **Old Challenge:** Have at least 3e12 base assistants within 5 minutes of a new game.
 - **New Challenge:** Have at least 3e14 base assistants within 5 minutes of a new game.

Unique Buildings

- **Tyrant Garrison**
 - **Effect:** Increase the production of Evil Fortresses based on Offline production.
 - **Old Formula:** $((50 + 3.5 * x^{0.75})\%)$, where x is Offline production.
 - **New Formula:** $((85 + 8.5 * x^{0.85})\%)$, where x is Offline production.
- **Freemason's Hall**
 - **Old Effect:** Increase the production of Inns based on the highest amount of assistants owned in this Reincarnation.
 - **Old Formula:** $(20 + 20 * x^{0.8})\%$, where x is the highest amount of assistants owned this Reincarnation.
 - **New Effect:** Increase the production of Inns based on Faction Coins found in this Era.
 - **New Formula:** $(60 + 60 * \ln(1 + x)^6)\%$, where x is Faction Coins found in this Era.

Artifacts

Artifact Upgrades

- **Veteran Figurine**
 - **Old Requirement:** Reincarnation 90
 - **New Requirement:** Reincarnation 85
 - **Old Effect:** Mercenary now benefits from all Challenges that match your current 1st alignment.
 - **New Effect:** Mercenary now benefits from all Challenges. For Ascension 1 only.

Bug Fixes

- Fixed Forbidden Facility production bonus to Mercenary being 100 times lower than its tooltip indicates.

Realm Grinder Update 4.3.5.0

All changes and additions

September 15th, 2025

Balance Changes

Spell Tiers

- **Call to Arms**
 - **Old Themed Requirement:** (60,000 * T / A) buildings built, for Ascension 1-4.
 - **New Themed Requirement:** (60,000 * T / A) buildings built for Ascension 1-3, (10,000 * T / A) buildings built for Ascension 4.