Now that paper 1 & 2 are done for everyone i think i'd be good if we could focus on Paper 3, even though that might be harder to predict due to diff. Options and narrow topic. Maybe we can discuss tips of things important to know:

Statistics & Probability:

Stats, Relations, and Groups:

Calculus:

Discrete mathematics:

Biggest L: TZ1:
When i saw {*22 MARKS*} AND LITERALLY DIDNT KNOW HOW TO DO PROBLEM a.) IT WAS SO STUPID THOUGH. THE WHOLE THING

Good good, we're all fucked :)))) Worked so fucking hard for math, and then two stupid mistakes are costing me 20+ marks in paper 1, and paper 2 was a nice clusterfuckkk lmao wtf was the alpha beta roots question…
I got that one… nothing in the IB syllabus about it though. Only knew from math team.

Lol samee

^^^bruh what did you put? I'm sure i failed that question!

FUCKKKKKKKKKKKKKKKKKKK
Legit that was the hardest in like past 3 years…. Past papers were never like this hard

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What the actual fuck was TZ 2 Paper 2..... (section B)?!?!?!?

Lmao tell me about it

Anyone thinks Paper 1 was extremely hard?

- *Me... but tbh its a good thing because it means paper2 will be easier :(*
- *Hopefully, can't trust IB any longer*
- *TZ1 was freaking garbage, like that was unlike any other past exam I've done*
    - *As in too hard? As in stupidly difficult*

- *Hahaha sameeee*
- *Which one did you think was the hardest?*
- *QUESTION 7 & 9 FOR ME UGH*
- *2018?*

MATH HL Exam predictions:

1. Based on all the past papers I did, Complex and Vectors are most likely to be in the last section.
2. 30-40 marks from Probability & Distributions in both the papers combined. Definitely Binomial and Normal distributions. Definitely Poisson too. It has appeared every session.
3. Complex Numbers - De Moivre's theorem → roots of unity appear quite a lot
4. Haven't seen calculating interquartile range in a while on past papers (correct me if wrong) so it might happen now. [Is that still a thing we do in IB?][It appeared in 2017 specimen, so I guess so.] - Came in november 2014 paper i1 I think ← you're right it was a part of the specimen.
5. There is ALWAYS an u-integration by parts and/or u-substitution
6. A long Tough Integration in Paper 1 section B, as it hasn't appeared in the last 2-3 rotations.[If I remember correctly this was in paper 1- accurate prediction]
7. At least 1 sub-question in Section B OR 1 full question in Section A for Mathematical Induction. Remember inequalities [This did come up in paper 1- accurate prediction]
8. Complex numbers is a topic where they usually combine it with another topic (such as series and trig). [It did come up in paper 1 combined with trig]
9. There is **always** a related rates of change question (It was part of the specimen).
10. Solving a triangle in either of the papers (or a circle)
11. Questions on polynomials and factor theorems, probably also applications of formulas for sum and product of roots
12. Probabilities Question of function transformations or composite functions
13. Acceleration and velocity (usually paper 2) [remember the +c in integration in kinematics is very important][also try taking a look at questions where velocity is a function of displacement (dV/ds) not time (dV/dt)]
14. Proving De Moivre's theorem using mathematical induction
15. Using the sum and product properties of a polynomial
16.

Questions:
This year the Maths HL exams have 20 less points (10 for paper 3, I think); what will this mean for the difficulty of the questions?

The difficulty will probably increase, IB won't let us off easily ;_; [According to the 2017 Guide, the point of reducing the marks is to give students more time to showcase their skills in the paper, implying that the difficulty will not change, we just get more time. In all likelihood, the grade boundaries might go up because of this.]

[Actually, it will probably be easier because May 2016 was a tough paper, so they are bound to decrease the difficulty]
Yeah, did anyone fine May 2016 TZ2 really difficult? Like that killed me

[Don't think they will decrease difficulty that much but maybe a little bit, grade boundaries are bound to be higher, I'd say 5-10% higher, but the same people will be getting the same grades, the change is length was mostly due to people being told to skip certain questions and therefore getting better marks for not doing certain questions, when better mathematicians didn't finish the paper because they attempted every question.]

According to Specimen Papers difficulty won't change.
HA WE THOUGHT IT WOULDN'T CHANGE BUT NOPE

In that case, it'll probably mean that (due to higher average grades), results won't actually change :/

Are we allowed to use scratch paper during the exam? My school has always said that we can't
You can just use the answer paper as long as you cross out the stuff that's not part of your answer
[I heard you can use answer booklet and just don't put it in together with your 'real' answer booklet when you are packing your paper] [My school asks us to attach the scratch answer booklet so and cut all the scratch work]

Is Matrix not included in the syllabus?
Only until 2015 paper

List of integrals that they often ask for

1. lnx → integrate by parts (u = lnx and v' = 1).
2. When there's $cos^2 x$, it's normally replaced by $\frac{cos(2x)+1}{2}$ and then integrated through u substitution ($u = 2x$) [I believe u-substitution is actually not required here - true if you apply the linear case].

3. $sin^2 x \rightarrow \frac{1-cos(2x)}{2} \rightarrow$ u substitution once more ($u = 2x$).
4. $\frac{1}{xlnx} \rightarrow$ u substitution $u = ln(x)$
5. Tangent substitutions are the hardest imo - example question? Try solving $\int xsec^2 x$

https://iboreddit.cf/assets/IB/temporary/Papers/2015%20May/Group%205%20-%20Mathematics/Mathematics_paper_1_TZ2_HL.pdf (question 8) that one's messed up <- to solve that one, just find dx in terms of dt, then it should be quite straightforward after that :) You also need to get sin(arctan(t)). No, its a messed up question, you have to find sinx in terms of t, and dt/dx then you use some arctan integral thing from the data booklet to find the final answer [how do you find sin(x) in terms of t ?]

$sinx = \frac{tanx}{secx};\ t = tanx;\ 1 + t^2 = sec^2 x\ (databooklet) \rightarrow sinx = \frac{t}{\sqrt{1+t^2}}$

(https://iboreddit.cf/assets/IB/temporary/Papers/2015%20May/Group%205%20-%20Mathematics/Mathematics_paper_1_TZ2_HL_markscheme.pdf) Btw. from the subject report: "Very few completely correct solutions were seen." 👌

Common Optimizations Questions - [what's helpful to me is to keep everything in differentials]

1. A cone being filled (for this one remember the that ratio of the height to the radius remains constant)
2. **A great question for rates that is very viable for our exam is the one they had on specimen.**

Guys does anyone have notes?
I got really nice notes for paper 3 but not for paper 1 T.T *Do you think you could share them?*

This may be very helpful:

Distance between a point and a plane: $\frac{|Ax+By+Cz-D|}{\sqrt{A^2+B^2+C^2}}$

Any specific Paper 1 predictions?

Paper 1 Predictions for TZ1 and TZ2 Here:
https://docs.google.com/spreadsheets/d/12nmLTJb3

UFTfWAjHTsTxheJO8ejoEsoKX9lMlPY2nps/edit#gid=0 (Done)

According to common questions through pretty much all the years, they like to test on:

Sequences (geometric + arithmetic)
Complex numbers (trig stuff)
Planes + Vectors
3 variable simultaneous equations-
Transformations + Graph drawing
Domain, Inverse functions, Binomial

ANY CALCULATOR TIPS?

List all doubts here (so that people can realise if that's their problem area as well or not):

DOES NORMAL DISTRIBUTION NORMALLY SHOW UP ON PAPER 1, cause I can't do it without a calculator

To draw a graph, we just need to substitute the value of x and y in the equation yeah? (PAPER1)

So anytime I want to find the area of a graph with the x-axis I should graph it first right? (Paper 1)

Yup, just make sure you review a couple of the key graphs which are:

- Logarithms
- Exponential
- Rational
- Polynomials
- Trigonometric [also inverses specifically arctan(x)]

Make sure you do more than just that. Find the maxs, mins, x and y intercepts along with any asymptotes.

Does anyone understand induction with differentiation? Any helpfuls videos online? I couldn't find any
If it's y by itself then y goes to dy/dx
If it's something like 2y^2 then it goes to 4y dy/dx
(basically differentiate anything containing y normally and then multiply by dy/dy at the end
If it's something like 2xy, then treat it like a product

Solve triangles with TWO possible values for the third side

SOO screwed for tomorrow- lmao same bro, did one past paper and fucked it up :)

- Me too