

Chapter 1 - Linear Functions

- Find slope (from equation, graph, points).
- Write equations and graph lines in slope-intercept, point-slope, standard form.
- Find x and y intercepts from a graph and an equation.
- Write/graph horizontal and vertical lines.
- Systems of equations - 2×2
- Graph linear inequalities and systems of linear inequalities.

Chapter 2 - Quadratic Functions

- Transformations of quadratics (vertical stretch/shrink, reflections, left/right, up/down)
- Graphing from vertex form, standard form, and intercept form
- Finding vertex (max/min) and axis of symmetry
- Focus and directrix (parabolas opening up, down, left, and right) & latus rectum
- Roots, Solutions, Zeros, x-intercepts
- Writing quadratic equations - with or without information on focus and directrix

Chapter 3 - Solving Quadratics

- ❖ Solving using square roots and factoring
- ❖ Completing the square
- ❖ Quadratic Formula & Discriminant
- ❖ Complex numbers (imaginary)
- ❖ Systems of nonlinear equations
- ❖ Quadratic inequalities

Chapter 4 - Polynomials

- ★ Sketching polynomials (end behavior)
- ★ Add, subtract, multiply, divide (long & synthetic) polynomials
- ★ Factor polynomials (GCF, sum & difference of cubes, by grouping, quadratic form)
- ★ Prove a factor or a zero of a polynomial then factor completely
- ★ Rational Roots Theorem
- ★ Modeling with Polynomials
- ★ Complex Conjugate Theorem