

Honors Algebra 3-4 Notes (1st semester) – Table of Contents

- Summer Packet/Chapter P: Prerequisites Review
 - P1: Graphical Representation of Data
 - P2: Graphs of Equations
 - P3: Lines (slope, point-slope, slope-intercept forms)
 - P4: Solving Equations Algebraically and Graphically
 - P5: Solving Inequalities
 - Radicals and Exponents:
- Chapter 1: Functions and Their Graphs
 - 1.1: Functions (definitions, properties)
 - 1.2: Graphs of Functions, min/max, increasing/decreasing, even/odd
 - 1.3: Transformations: shifting, reflecting, stretching
 - 1.4: Combinations of Functions
 - 1.5: Inverse Functions
- Chapter 2: Polynomial and Rational Functions
 - 2.1: Quadratic Functions, sketching quadratics
 - 2.2: Higher degree polynomials, leading coefficient test, zeros, multiplicity
 - 2.3: Real Zeros of polynomials: polynomial & synthetic division, Rational Zero Test, Remainder and Factor Theorems
 - 2.4: Complex Numbers
 - 2.5: Fundamental Theorem of Algebra (# of zeros of polynomial = degree)
 - 2.6: Rational Functions (Vert./Horiz. asymptotes)
 - 2.7: Graphs of Rational Functions (Slant asymptotes)
- Chapter 10: Conic Sections
 - 10.1: Parabolas
 - 10.2: Ellipses
 - 10.3: Hyperbolas, Identifying type of conic from general equation
- Chapter 3: Exponential and Logarithmic Functions
 - 3.1: Exponential functions/graphs, Compound Interest
 - 3.2: Logarithms (definition and graph), Definition of 'e'
 - 3.3: Properties of Logarithms (combining/separating), change of base
 - 3.4: Solving exponential and logarithmic equations
 - 3.5: Exponential and Logarithmic Models (growth/decay, Gaussian, Logistic)
- Chapter 4: Trigonometric Functions
 - 4.1: Radian and Degree measure of angles
 - 4.2: Unit Circle, Definition of $\sin(t)$, $\cos(t)$ and 6 trig functions
 - 4.3: Right triangle trig, application problems, Trig Identities (transform problems)