Algebra 2
Midterm Exam Topics - 2020

Unit 1: Quadratic Functions (chapters 1 & 2)
- Parent functions (graphs, names, & equations)
- Transformations of parent functions (in vertex form)
- Graphing parabolas
  - given the equation in vertex form
  - given the equation in standard form
  - given the equation in intercept form
- Writing quadratic equations (given the graph)
  - in vertex form
  - in intercept form
- Modeling
  - correlation and regression
  - function of best-fit
  - interpolating and extrapolating values

Unit 2: Quadratic Equations and Complex Numbers (chapter 3)
- Multiplying binomials (FOIL)
- Factoring polynomials
  - using the GCF
  - factoring quadratic trinomials when $a = 1$
  - factoring by grouping
  - factoring quadratic trinomials when $a \neq 1$
- Simplifying single radicals
- Rationalizing the denominator (with radicals)
- Solving quadratic equations
  - by graphing
  - by using square roots
  - by factoring
  - by using the quadratic formula
  - by completing the square
- The discriminant
- complex numbers and i^2

<u>Unit 3</u>: Polynomial Functions (chapter 4)
- Types of polynomials (by number of terms and degree)
- Basic graph shapes of polynomial functions and their end behavior
- Adding, subtracting, and multiplying polynomials
- Dividing polynomials
  - long division
  - synthetic division