

Algebra II

1 Review (c.f., Chs. 1, 2)

- 1.1 Linear equations
- 1.2 Linear functions
- 1.3 Grouping and order of operations
- 1.4 FOIL

2 Functions 1: Anybody have a Black Box? (c.f., Chs. 1, 2)

- 2.1 Notation and concept
- 2.2 Domain, range, and the vertical line test
- 2.3 Graph features (roots, extrema, asymptotes)
- 2.4 Constructing algebraic functions for real-world scenarios

3 Number Systems: Imagine! (c.f., Chs. 1, 5)

- 3.1 i , powers of i
- 3.2 The complex number system and hierarchy
- 3.3 Complex number graphing and operations

4 Algebraic Operations 1: Put down some roots (c.f., Chs. 5, 6)

- 4.1 Quadratics, Factoring, and the Quadratic Formula
- 4.2 Complex Roots and The Fundamental Theorem of Algebra
- 4.3 Polynomials of least degree
- 4.4 Extraneous solutions - Word Problems

5 Algebraic Operations 2: I have the power! or It's Big, It's Heavy, It's Wood (c.f., Chs. 7, 8)

- 5.1 Exponential and root laws
- 5.2 Logarithms
- 5.3 Radical equations
- 5.4 Extraneous solutions - Radical equations

(over)

6 Algebraic Operations 3 (c.f., Chs. 6, 8)

6.1 Rational algebra

6.2 Polynomial division

6.3 General manipulation of polynomial and transcendental equations

7 Solving, graphing, and interpreting systems (c.f., Ch. 3)

7.1 Linear systems

7.2 Inequality systems

8 Special trigonometric values and relationships (c.f., Chs. 13, 14)

8.1 Special angles and trig

8.2 Trig relationships and the unit circle

8.3 Properties of trig graphs and equations

9 Functions 2: Real-world applications (c.f., Ch. 9)

9.1 Constructing transcendental functions for scenarios

9.2 Constructing combination functions for scenarios

9.3 Constructing inverse functions

9.4 Step functions and piecewise functions and their applications

10 Linear Algebra (c.f., Ch. 4)

10.1 Basic matrix notation and operations

10.2 Matrix inverses

10.3 Cramer's Rule

11 Sequences and Series (c.f., Ch. 12)

11.1 Arithmetic sequences

11.2 Geometric sequences

11.3 Σ : Sigma notation

11.4 Π : Pi notation

11.5 The Binomial Theorem

12 Statistics and Probability(c.f., Ch. 11)

12.1 Quartiles and standard deviation

12.2 Linear regression

12.3 Probability, conditional probability

13 Conic Sections (c.f., Ch. 10)