

Pre-Calculus

1 Preparation/Review

2 Function Theory and Mathematical Modeling

2.1 Functions - Domains, Graph analysis, Piecewise definitions, Inverses (Chs. 1 and 3)

2.2 Rational function analysis and decomposition, Step functions (Chs. 1 and 4)

2.3 Amplifier Model Project

2.4 Unit Exam

3 Trigonometric Models

3.1 Periodicity, Vibration and Circular Motion - Trigonometric values, graphs and equations (Chs. 5 and 6)

3.2 Polar and Parametric Models (Ch. 8)

3.3 Vibration Model Project

3.4 Unit Exam

4 Modeling a Multidimensional World

4.1 Intro to Vector Models and Products, Polar Representation of Complex Numbers (Chs. 8 and 9)

4.2 Trigonometric Identities and Equations (Ch. 7)

4.3 Conics (Ch. 10)

4.4 Vector Functions, Fields, and Transforms (Ch. 8)

4.5 Field of View Project

4.6 Unit Exam

5 Discrete Mathematics

5.1 Sequencies, Series and Limits (Ch. 12)

5.2 Convergence Tests, Induction (Ch. 12)

6 Final Exam