

Liberty Common High School – College Trigonometry

Unit 1: Chapter 6 Trigonometric Functions Review (approximately 21 days)

- 6.1 Angles and Their Measures
- 6.2 Trigonometric Functions: Unit Circle Approach
- 6.3 Properties of the Trigonometric Functions
- 6.4 Graphs of the Sine and Cosine Functions
- 6.5 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions
- 6.6 Phase Shift; Sinusoidal Curve Fitting

Unit 2: Chapter 7 Analytic Trigonometry (approximately 27 days)

- 7.1 The Inverse Sine, Cosine, and Tangent Functions
- 7.2 The Inverse Trigonometric Functions (continued)
- 7.3 Trigonometric Identities
- 7.4 Sum and Difference Formulas
- 7.5 Double Angle and Half Angle Formulas
- 7.6 Product-to-Sum and Sum-to-Product Formulas
- 7.7 Trigonometric Equations (I)
- 7.8 Trigonometric Equations (II)

Unit 3: Chapter 8 Applications of Trigonometric Functions (approximately 19 days)

- 8.1 Right Triangle Trigonometry: Applications
- 8.2 The Law of Sines
- 8.3 The Law of Cosines
- 8.4 The Area of a Triangle
- 8.5 Simple Harmonic Motion

Unit 4: Chapter 9 Polar Coordinates; Vectors (approximately 24 days)

- 9.1 Polar Coordinates
- 9.2 Polar Equations and Graphs
- 9.3 The complex Plane: DeMoivre's Theorem
- 9.4 Vectors
- 9.5 The Dot Product
- 9.6 Vectors in Space
- 9.7 The Cross Product

Unit 5: Chapter 10 Analytic Geometry (approximately 24 days)

- 10.1 Conics
- 10.2 The Parabola
- 10.3 The Ellipse
- 10.4 The Hyperbola
- 10.5 Rotation of Axes: General Form of a Conic
- 10.6. Polar Equations of Conics
- 10.7 Plane Curves and Parametric Equations

Unit 6: Chapter 12 Sequences, Induction, and Binomial Theorem (approximately 17 days)

- 12.1 Sequences
- 12.2 Arithmetic Sequences
- 12.3 Geometric Sequences & Series
- 12.4 Mathematical Induction
- 12.5 The Binomial Theorem

Unit 7: Chapter 13: Counting and Probability (approximately 8 days)

- 13.1 Counting
- 13.2 Permutations & Combinations
- 13.3 Probability

Unit 8: Chapter 14: A Preview of Calculus (approximately 14 days, if time allows)

- 14.1 Finding Limits Using Tables and Graphs
- 14.2 Algebra Techniques for Finding Limits
- 14.3 One-Sided Limits; Continuous Functions
- 14.4 The Tangent Problem; The Derivative
- 14.5 The Area Problem; The Integral

Unit 9: Review and Additional Topics (approximately 14 days)

- Final Exam Review
- ACT topics review
- Math Placement Exam Review

Final (approximately 2 days)

The final exam is mandatory.