

### Course Description:

In this course, you will review and expand on your knowledge of rational and radical equations, graph radical functions, and extend your knowledge of trigonometric functions. You will work with interactive text, delve into example problems, and watch engaging, instructional videos to enhance your learning.

### Course Objectives:

- Understand solving equations as a process of reasoning and explain the reasoning.
- Interpret the structure of expressions.
- Analyze functions using different representations.
- Represent and solve equations and inequalities graphically.
- Review trigonometric ratios and learn how to calculate reciprocal trig ratios.
- Use the unit circle to analyze angles and trig ratios.
- Graph the sine, cosine, and tangent functions and identify their key features.
- Rewrite trigonometric ratios in terms of other trigonometric ratios by using the reciprocal, tangent, and cotangent identities.
- Prove the Pythagorean Identity by applying definitions and other trigonometric identities.
- Rewrite trigonometric ratios in terms of other trigonometric ratios by using the negative angle identities.

### Required Materials:

In course.

### Schedule of Work:

#### Unit 1: Radical Functions, Part 1

- Math Muscle Exercise (Lessons 1, 3, and 5)
- Direct Instruction
  - Key Terms
  - Text and Videos: Solve Rational Equations, Part 1; Solve Rational Equations, Part 2; Radical Expressions & Equations, Part 1; Radical Expressions & Equations, Part 2; Extraneous Solutions, Part 1; Extraneous Solutions, Part 2
  - Workbook assessments
- Discussion (Lessons 2, 4, and 6)
- Checkpoint assessments (Lessons 2 and 4)
- Unit 1 Exam (Lesson 6)

#### Unit 2: Radical Functions, Part 2

- Math Muscle Exercise (Lessons 7 and 9)
- Direct Instruction
  - Key Terms
  - Text and Videos: Graph Radical Functions, Part 1; Graph Radical Functions, Part 2; Intersections of Functions, Part 1; Intersections of Functions, Part 2
  - Workbook assessments
- Discussion (Lessons 8 and 10)
- Checkpoint assessments (Lesson 8)

- Unit 2 Exam (Lesson 10)

#### Unit 3: Trigonometric Functions, Part 1

- Math Muscle Exercise (Lessons 11, 13, and 15)
- Direct Instruction
  - Key Terms
  - Text and Videos: Trigonometric Ratios, Part 1; Trigonometric Ratios, Part 2; Unit Circle, Part 1; Unit Circle, Part 2; Angles & Radians, Part 1; Angles & Radians, Part 2
  - Workbook assessments
- Discussion (Lessons 12, 14, and 16)
- Checkpoint assessments (Lessons 12 and 14)
- Unit 3 Exam (Lesson 16)

#### Unit 4: Trigonometric Functions, Part 2

- Math Muscle Exercise (Lessons 17 and 19)
- Direct Instruction
  - Key Terms
  - Text and Videos: Graphing Sine, Cosine, and Tangent Functions, Part 1; Graphing Sine, Cosine, and Tangent Functions, Part 2; Identifying Key Features, Part 1; Identifying Key Features, Part 2
  - Workbook assessments
- Discussion (Lessons 18 and 20)
- Checkpoint assessments (Lesson 18)
- Unit 4 Exam (Lesson 20)

#### Unit 5: Trigonometric Identities, Part 1

- Math Muscle Exercises (Lessons 21 and 23)
- Direct Instruction
  - Key Terms
  - Text and Videos: Fundamental Trigonometric Identities, Part 1; Fundamental Trigonometric Identities, Part 2; Finding Sine, Part 1; Finding Sine, Part 2
  - Workbook assessments
- Discussion (Lessons 22 and 24)
- Checkpoint assessments (Lesson 22)
- Unit 5 Exam (Lesson 24)

#### Unit 6: Trigonometric Identities, Part 2

- Math Muscle Exercises (Lessons 25 and 27)
- Direct Instruction
  - Key Terms
  - Text and Videos: Finding Cosine, Part 1; Finding Cosine, Part 2; Finding Tangent, Part 1; Finding Tangent, Part 2
  - Workbook assessments
- Units 1–6 Review (Lesson 29)
- Discussion (Lessons 26 and 28)
- Checkpoint assessments (Lesson 26)
- Unit 6 Exam (Lesson 28)
- Course Final Exam (Lesson 29)