

### Course Description:

In this course, you will review and expand on your knowledge of linear, quadratic, and exponential functions, as well as broaden your understanding of polynomial and rational functions. You will work with interactive text, delve into example problems, and watch engaging, instructional videos to enhance your learning.

### Course Objectives:

- Perform arithmetic operations with complex numbers.
- Use complex numbers in polynomial identities and equations.
- Interpret the structure of expressions.
- Perform arithmetic operations on polynomials.
- Use polynomial identities to solve problems.
- Understand the relationship between zeros and factors of polynomials.
- Analyze polynomial functions using different representations.
- Represent and solve polynomial equations graphically.
- Rewrite rational expressions.

### Required Materials:

In course.

### Schedule of Work:

#### Unit 1: Complex Numbers and Polynomials, Part 1

- Math Muscle Exercise (Lessons 3 and 5)
- Direct Instruction
  - Key Terms
  - Text and Videos: Complex Numbers, Part 1; Complex Numbers, Part 2; Complexity & Quadratics, Part 1; Complexity & Quadratics, Part 2; Parts of Polynomials, Part 1; Parts of Polynomials, Part 2
  - Workbook assessments
- Discussion (Lessons 2, 4, and 6)
- Checkpoint assessments (Lessons 2 and 4)
- Unit 1 Exam (Lesson 6)

#### Unit 2: Complex Numbers and Polynomials, Part 2

- Math Muscle Exercise (Lessons 7 and 9)
- Direct Instruction
  - Key Terms
  - Text and Videos: Operations on Polynomials, Part 1; Operations on Polynomials, Part 2; Polynomial Operations & Identities, Part 1; Polynomial Operations & Identities, Part 2
  - Workbook assessments
- Discussion (Lessons 8 and 10)
- Checkpoint assessments (Lesson 8)
- Unit 2 Exam (Lesson 10)

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

- Math Muscle Exercise (Lessons 11, 13, and 15)

- Direct Instruction
  - Key Terms
  - Text and Videos: The Remainder Theorem, Part 1; The Remainder Theorem, Part 2; Factoring, Part 1; Factoring, Part 2; Zeros, Part 1; Zeros, Part 2
  - Workbook assessments
- Discussion (Lessons 12, 14, and 16)
- Checkpoint assessments (Lessons 12 and 14)
- Unit 3 Exam (Lesson 16)

## Unit 4: Polynomial Functions, Part 2

- Math Muscle Exercise (Lessons 17 and 19)
- Direct Instruction
  - Key Terms
  - Text and Videos: End Behavior, Part 1; End Behavior, Part 2; Graphing Polynomials, Part 1; Graphing Polynomials, Part 2
  - Workbook assessments
- Discussion (Lessons 18 and 20)
- Checkpoint assessments (Lesson 18)
- Unit 4 Exam (Lesson 20)

## Unit 5: Rational Functions, Part 1

- Math Muscle Exercises (Lessons 21, 23, and 25)
- Direct Instruction
  - Key Terms
  - Text and Videos: Dividing Polynomials, Part 1; Dividing Polynomials, Part 2; Dividing Polynomials, Part 3; Dividing Polynomials, Part 4; Adding & Subtracting Rational Expressions, Part 1; Adding & Subtracting Rational Expressions, Part 2
  - Workbook assessments
- Discussion (Lessons 22, 24, and 26)
- Checkpoint assessments (Lessons 22 and 24)
- Unit 5 Exam (Lesson 26)

## Unit 6: Rational Functions, Part 2

- Math Muscle Exercises (Lessons 27 and 29)
- Direct Instruction
  - Key Terms
  - Text and Videos: Multiplying & Dividing Rational Expressions, Part 1; Multiplying & Dividing Rational Expressions, Part 2; Graph Rational Functions, Part 1; Graph Rational Functions, Part 2
  - Workbook assessments
- Units 1–6 Review (Lesson 31)
- Discussion (Lessons 28 and 30)
- Checkpoint assessments (Lesson 28)
- Unit 6 Exam (Lesson 29)
- Course Final Exam (Lesson 31)

