

## Unit 8: Polynomials and Complex Numbers

Relevant Course Objectives:

CO3 (Polynomials and Complex Numbers): Perform arithmetic on polynomials and complex numbers to simplify algebraic expressions and analyze the structure of functions.

**Essential Question:**

- **How can we predict the behavior of higher order polynomials?**
- **Can a quadratic equation have solutions when the corresponding function has no x-intercepts?**

Week 25 March 28 - April 1

### **Tuesday - 8.1.1 Replacement**

- HW 49
- Definition of a Polynomial
- Polynomial Graph Investigation

Notes: Definition of Polynomial

HW 49

### **Wednesday - 8.1.2**

- HW 49
- Roots of Polynomial Functions
- Parents Graphs of Higher Order Polynomials (8-26 through 8-35)

Notes: End Behavior of Higher Order Polynomials

HW 50: Ch. 8 #8, 9, 11, 14 (8.1.1)

### **Friday - 8.1.3**

- HW 50
- Curve Fitting with Higher Order Polynomials (8-45 through 8-53)

HW 51: Ch. 8 #16, 17, 18, 19, 20 (8.1.1)

### **Unit 8 Assessments:**

Summative: Unit 8 Test - Wednesday April 27

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### Week 26 April 4 - 8

#### **Tuesday - 8.2.1**

- HW 51
- Imaginary Numbers
- Real and Complex Roots
- Roots vs. Zeroes

Notes: Imaginary and Complex Numbers

HW 52: Ch. 8 #36, 37, 38, 39, 44 (8.1.2)

#### **Wednesday - 8.2.2**

- HW 52
- Complex Roots
- Discriminant

Notes: Discriminant

HW 53: Ch. 8 #56, 57, 58, 60, 62 (8.1.3)

#### **Friday - 8.2.3**

- HW 53
- Graphing Complex Numbers
- Algebraic Manipulation with Complex Numbers

Notes: Graphing Complex Numbers

HW 54: Ch. 8 #70, 71, 72, 73, 76, 77

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Week 27 April 11 - 15

**Tuesday - 8.3.1/8.3.2**

- HW 54
- Polynomial Division
- Determining the Factors and Integral Roots of Higher Order Polynomials

HW 55: Ch. 8 #93, 94, 95, 96 (8.2.2)

**Wednesday - 8.3.3**

- HW 55
- Applications of Higher Order Polynomials

HW 56: Ch. 8 #104, 105, 106, 107, 110 (8.2.3)

**Friday - Unit 8 Closure**

- HW 56

HW: Unit 8 Study Guide (due after Break)

**Unit 8 Assessments:**

Summative: Unit 8 Test - Wednesday April 27

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Week 28 April 25-29

### **Tuesday - Unit 8 Review**

- Unit 8 Study Guide

HW: Unit 8 Extra Practice (choice of COs)

### **Wednesday - Unit 8 Test**

HW: TBD

### **Friday - TBD**

- TBD

### **Unit 8 Assessments:**

Summative: Unit 8 Test - Wednesday April 27