8 Algebra 1 Unit 07: Polynomial Equations and Factoring

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 3**
Length: **13 days**
Status: **Published**

Unit Overview

Students are expected to work together on explorations, make conjectures, construct viable arguments, and critique the reasoning of others.

Focus on Major Work Chapter 7:

- performing operations with polynomials.
- factoring polynomials to solve equations.
- reveal roots of polynomials.

Students will be able to…

- understand polynomial equations and factoring.
- classify polynomials by degree and number of terms.
- add, subtract, multiply, and divide polynomials.
- solve polynomial equations.
- factor polynomials and use factoring to solve real-life problems.

Standards

A.APR.A.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
A.APR.B.3	Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.
A.REI.A.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
A.REI.B.4.b	Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.
A.SSE.A.1.a	Interpret parts of an expression, such as terms, factors, and coefficients.
A.SSE.A.2	Use the structure of an expression to identify ways to rewrite it.
A.SSE.B.3.a	Factor a quadratic expression to reveal the zeros of the function it defines.

Materials

- Algebra 1
- 7.1 Adding and Subtracting Polynomials
- 7.2 Multiplying and Dividing Polynomials
- 7.3 Special Products of Polynomials
- 7.4 Solving Polynomials Equations in Factored Form
- 7.5 Factoring x^2+bx+c
- 7.6 Factoring ax^2+bx+c
- 7.7 Factoring Special Products
- 7.8 Factoring Polynomials Completely

- ST Math
- 3 Act Lessons
- Brainingcamp Manipulatives
- Desmos
- Brainpop Resources
- Delta Math

Technology

8.1.12.DA.5	Create data visualizations from large data sets to summarize, communicate, and support different interpretations of real-world phenomena.
8.1.12.AP.2	Create generalized computational solutions using collections instead of repeatedly using simple variables.
8.1.12.AP.5	Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects.

Assessment

Formative Assessment

- Teacher Observation
- Daily Quick Check
- Quizzes
- Exit Tickets

Summative Assessment

- Topic Tests
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

- Follow IEP Plan which may contain some of the following examples…
- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Limit number of questions
- Scribe
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

504

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts

- Manipulatives
- Math Diagnosis & Intervention System

At-risk of Failure

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
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Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Interdisciplinary Connections

ELA: NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

Science: MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

21st Century Life Literacies & Key Skills

9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.
9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or

	practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
9.1.12.CDM.8	Compare and compute interest and compound interest and develop an amortization table using business tools.
9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).
9.1.12.PB.1	Explain the difference between saving and investing.

Career Ready Practices

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.