**Algebra 2 Module 2 Topic 1: Relating Factors to Zeros**

**January 5th-12th: Topic 1 Lesson 1: Satisfactory Factoring: Factoring Polynomials to Identify Zeros**

* Learn to factor higher level polynomials using:
  + GCF
  + Chunking
  + Grouping
  + Perfect Squares
  + Quadratic Form

**January 12th-19th Topic 1 Lesson 2: Divide and Conquer: Polynomial Division**

* Divide two polynomials
  + Polynomial Long Division
  + Test factors with synthetic division
  + Remainder Theorem
  + Factor Theorem

January 20th- Test Review

January 23rd Test covering Factoring polynomials and polynomial division

| Standards: | Essential Questions: |
| --- | --- |
| 1. CCSS: HS.A-SSE.A.2 Use the structure of an expression to   identify ways to rewrite it.   1. CCSS: HS.A-SSE.B.3   Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression   1. CCSS: HS.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. | *What is the relationship between factoring a polynomial and finding its zeros?*  *Why factor?*  *What information can you find from factored form?* |

**Review from previous topics:**

| Quadratic Form | Example | Information from this form: |
| --- | --- | --- |
| Standard Form: |  |  |
| Vertex Form: |  |  |
| Factored Form: |  |  |

**General Vocab:**

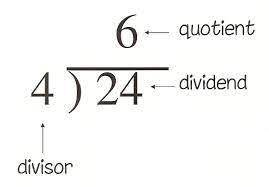
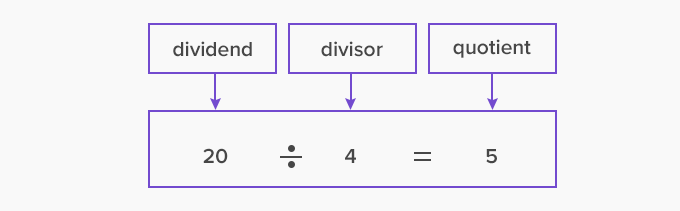
| Vocabulary | Definition | Example |
| --- | --- | --- |
| Factor |  |  |
| Zeros |  |  |
| Greatest Common Factor (GCF) |  |  |
| Coefficient |  |  |
| Term |  |  |

**What you need to know and be able to do for Lesson 1: Satisfactory Factoring: Factoring Polynomials to Identify Zeros**

| When you have higher degree polynomials, you can find the zeros by factoring several ways: | |
| --- | --- |
| Strategy | Steps: |
| Finding the GCF |  |
| Grouping |  |
| Chunking  , |  |
| Finding the Perfect Square Trinomial |  |
| Factoring using quadratic form |  |

**What you need to know and be able to do for Lesson 2: Divide and Conquer: Polynomial Division**

Label the terms (**quotient, divisor, dividend**) for these equations:



In a polynomial term, you treat it the same way:

p(x)=-9x-10

q(x)= x+1

Divide p(x) by q(x)

-9x-10 ÷ x+1 or X+1 ⟌-9x-10

Solve. X+1 ⟌-9x-10

Steps:

Synthetic Division:

Remainder Theorem:

Factor Theorem:

Practice/Extra Notes