

Vertical Progression:

7th Grade	<p>7.EE.A Use properties of operations to generate equivalent expressions.</p> <ul style="list-style-type: none"> ○ 7.EE.A.2 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
Algebra 1	<p>ELG.MA.HS.A.4: Understand the relationship between zeros and factors of polynomials.</p> <ul style="list-style-type: none"> ○ A-APR.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. [quadratic and cubic polynomials]
Algebra 2	<p>ELG.MA.HS.A.4: Understand the relationship between zeros and factors of polynomials.</p> <ul style="list-style-type: none"> ○ A-APR.2 Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$. ○ A-APR.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. [quadratic, cubic, and quartic polynomials]

Students will demonstrate command of the ELG by:

- Identifying zeros of polynomials when those polynomials can be factored.
- Drawing a rough graph of a polynomial function based on the zeros of the function.

Vocabulary:

- Polynomial function
- Zeros of a function

Sample Instructional/Assessment Tasks:

1) Standard(s): A-APR.3

Source: Adapted from PARCC Algebra 1 PBA Practice Test

Item Prompt:

Determine the zeros of the function $f(n) = -12n^2 - 11n + 15$

Correct Answer(s):

$3/4$ and $-5/3$ are zeros of f

2) Standard(s): A-APR.3

Source: Adapted from PARCC Algebra 1 EOY Practice Test

Item Prompt:

a) Determine all zeros for the function $f(x) = (x^2 + 2x - 8)(x - 6)$

Correct Answer(s):

a) -4 , 2 , and 6 are zeros