Learning Targets

Polynomials and Rational Functions

Lesson 1: Let's Make a Box

- I can create and interpret a polynomial that models the volume of a box.

Lesson 2: Funding the Future

- I can use polynomials to understand different kinds of situations.

Lesson 3: Introducing Polynomials

- I can identify important characteristics of polynomial graphs and expressions.

Lesson 4: Combining Polynomials

- I understand that if you add, subtract, or multiply polynomials, you get another polynomial.

Lesson 5: Connecting Factors and Zeros

- I can find the zeros of a function from its factored form.

Lesson 6: Different Forms

- I can identify features of polynomials and their graphs using their standard and factored forms.

Lesson 7: Using Factors and Zeros

- I can write an expression for a function that has specific horizontal intercepts.

Lesson 8: End Behavior (Part 1)

- I understand why a function's end behavior is determined by its leading term.

Lesson 9: End Behavior (Part 2)

- I can identify the end behavior of a polynomial function from its equation.

Lesson 10: Multiplicity

- I can use zeros and multiplicities to sketch a graph of a polynomial.

Lesson 11: Finding Intersections

- I can find where two polynomial functions intersect.

Lesson 12: Polynomial Division (Part 1)

- I can divide one polynomial by another.

Lesson 13: Polynomial Division (Part 2)

- I can use long division to divide polynomials.

Lesson 14: What Do You Know About Polynomials?

- I can use division to rewrite a polynomial in factored form starting from a known factor and then sketch what it looks like.

Lesson 15: The Remainder Theorem

- I understand the remainder theorem and why it's true.

Lesson 16: Minimizing Surface Area

- I can write a rational function to model different properties of cylinders.

Lesson 17: Graphs of Rational Functions (Part 1)

- I can identify a vertical asymptote from a graph or an equation of a rational function.

Lesson 18: Graphs of Rational Functions (Part 2)

- I can identify a horizontal asymptote from a graph or an equation of a rational function.

Lesson 19: End Behavior of Rational Functions

- I can find the end behavior of a rational function by rewriting it as $f(x) = q(x) + \frac{r(x)}{b(x)}$.

Lesson 20: Rational Equations (Part 1)

- I can write rational expressions that represent averages to answer questions about the situation.

Lesson 21: Rational Equations (Part 2)

- I can write and solve equations with simple rational expressions on each side.

Lesson 22: Solving Rational Equations

- I know how to check for extraneous solutions to rational equations.

Lesson 23: Polynomial Identities (Part 1)

- I understand what an identity is in mathematics.

Lesson 24: Polynomial Identities (Part 2)

- I can justify why identities are true.

Lesson 25: Summing Up

- I understand why the geometric sum formula is true.

Lesson 26: Using the Sum

- I can use the geometric sum formula to solve problems.