

# **Math Virtual Learning**

# Algebra 2A Polynomial Long Division

April 15, 2020



#### Lesson: Polynomial Long Division

### Learning Target:

LT D2 I can perform polynomial division (long and synthetic) and apply the remainder theorem.

# **Objective:**

Students will be able to long divide polynomials with a linear divisor.



#### You need to watch these videos:

Intro to Long Division of Polynomials

How to Divide a Binomial Polynomial into a Quadratic Polynomial



Things to remember when dividing polynomials.

- 1. Write your polynomials in descending order.
- 2. Stack like terms in your problem.
- 3. Be very careful with your subtraction sign make sure it gets distributed to both terms.

#### Practice

Try these four problems on your own. Your answers may have remainders.

1. 
$$(2x^2 + 7x + 6) \div (x + 2)$$
  
2.  $(x^2 + 7x + 12) \div (x + 3)$   
3.  $(x^2 - 4x - 45) \div (x - 9)$   
4.  $(2x^2 - 5x + 3) \div (2x - 1)$ 

## Worked Example

$$(2x^{2}+7x+6) \stackrel{:}{:} (x+2) \qquad \text{Like terms}$$
Steps!. Set up problem
$$32x + 3$$
Step 2.  $x \cdot 2x = 2x^{2}$ 

$$x+2) 2x^{2}+7x+6$$

$$4\text{his} \stackrel{?}{:} \stackrel{?}{:} \stackrel{?}{:} \stackrel{?}{:} 2x^{2}+4x = 4$$

$$3\text{tep 3: } 2x(x+2) = 2x^{2}+4x$$

$$3\text{tep 4: Subtract Down Grad  $\bigcirc 3x+6$ 

$$3x+6$$

$$3\text{tep 4: Subtract Down Grad  $\bigcirc 3x+6$ 

$$3x+6$$

$$3\text{tep 5. Kepeat$$

$$Answer: 2x+3$$$$$$



**Additional Practice** 

Khan Academy

Khan Academy

Kuta Dividing Polynomials

**Additional Resources** 

Math is Fun

Dividing by a Polynomial Containing More Than One Term