HOW Reminders

Preparedness:

- Be in the classroom when the bell rings

- Have something to write with, a calculator, and your notebook

Engagement:
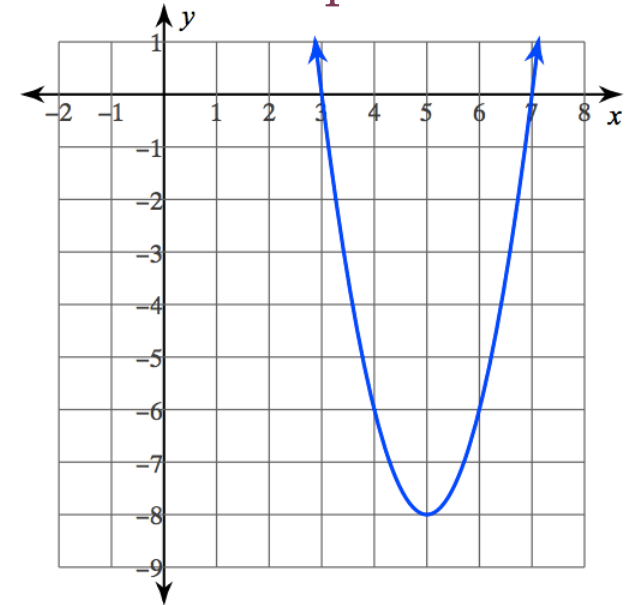
- Have your phone and computer put away

Warm-Up

1) Write the equation of the parabola in <u>any</u> form.

$y = 2(x - 3)(x - 7)$

$y = 2(x - 5)^2 - 8$

$y = 2x^2 - 20x + 42$

2) Why do we find regression equations for a set of data? To estimate values for missing data points.

Unit 2: Mini-Review

Learning Targets:

- I can multiply two binomials.
- I can factor a polynomial.
- I can simplify single radicals.

- ## I can multiply 2 binomials:

What is a *binomial*???

A polynomial with 2 terms.

Some examples of binomials are:

$3x + 1$

$\dfrac{1}{4}a^3 + 0.7w$

$5x^2 - 6y$

$-12 - 6.2b$

- ## I can multiply 2 binomials:

$$(2x + 3)(5x + 4)$$

Sam's work:

$(2x + 3)(5x + 4)$

$10x^2 + 12$

Share: **TALK MATH**

Think: Is she correct? If so, why? If not, why not?

Padlet:
https://padlet.com/abbotte2/bs9wup6ahwwh

- **I can multiply 2 binomials:**

$$(2x + 3)(5x + 4)$$

$$= 10x^2 + 8x + 15x + 12$$

$$= 10x^2 + 23x + 12$$

- **I can multiply 2 binomials:**

You try...

1. $(3x - 7)(5x + 1)$

   $= 15x^2 - 32x - 7$

3. $(7 + 2m)(-4 - 9m)$

   $= -28 - 71m - 18m^2$

2. $(-4a + 8)(3a - 6)$

   $= -12a^2 + 48x - 48$

4. $(2x - 8)(5 + 10y)$

   $= 10x + 20xy - 40 - 80y$

- ## I can factor a polynomial:

What is *factoring*???

"un-distributing"

"un-FOILing"

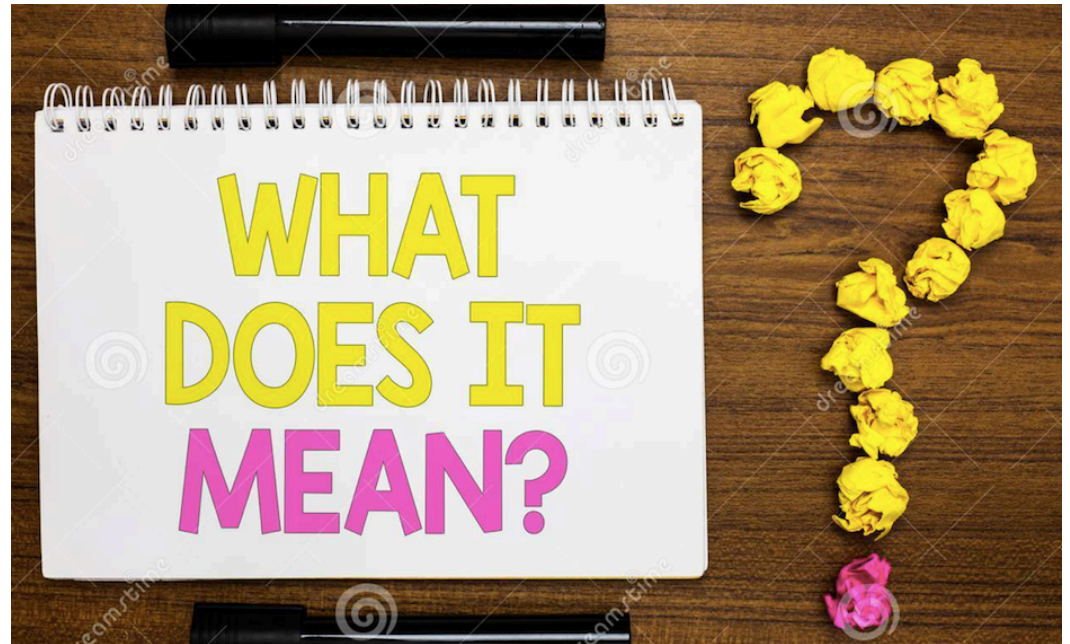Finding what to multiply together to get a given expression

Splitting an expression into a product of simpler expressions

- # I can factor a polynomial:

Factoring out the Greatest Common Factor (GCF):

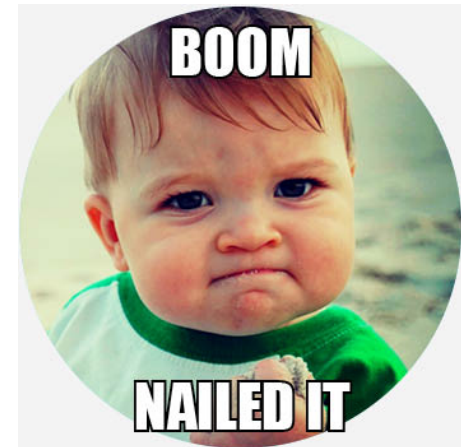Finding the biggest number and variable degree that evenly divides into each term of an expression

- **I can factor a polynomial:**

Factoring out the Greatest Common Factor (GCF):

1) $24 + 40m$

$8(3 + 5m)$

3) $-100x^4y^3 - 10x^2y^5 + 70xy^6$

$10xy^3(-10x^3 - 1xy^2 + 7y^3)$

2) $4p^2 - 12p - 10$

$2(2p^2 - 6p - 5)$

- # I can factor a polynomial:

Factoring a trinomial with no GCF: What is a trinomial??

A trinomial is a polynomial with 3 terms

Some examples of trinomials are:

$$4x^2 - 3x + 7 \qquad \frac{6}{7}x^3 - 8y + 10$$

$$-2x^9 + 9x^5 - 6 \qquad 4.6x + 3.1xy + 2.7$$

- ## I can factor a polynomial:

$$x^2 + 7x + 10$$

Robbie's answer:

$(x + 3)(x + 4)$

Maddie's answer:

$(x + 5)(x + 2)$

Jamie's answer:

$(x + 10)(x - 3)$

<u>Think</u>: Who is right? What did the others do wrong?

<u>Share</u>:

<u>Padlet</u>:
https://padlet.com/abbotte2/bs9wup6ahwwh

- ## I can factor a polynomial:

You try…

1. $x^2 + 13x + 42$

   $(x + 7)(x + 6)$

2. $x^2 - 6x + 8$

   $(x - 4)(x - 2)$

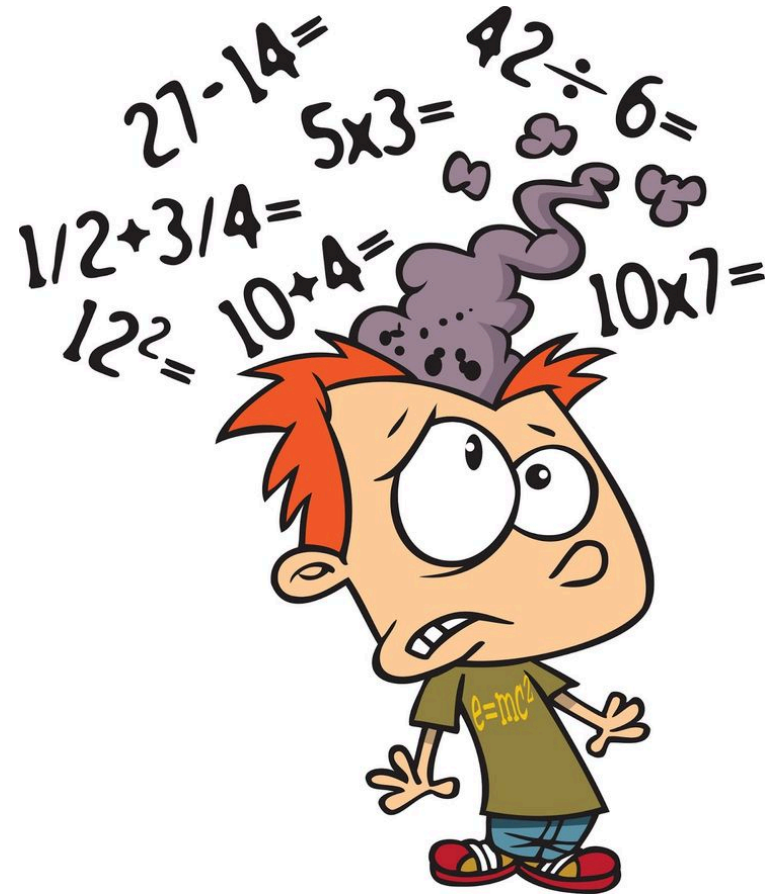3. $x^2 - 3x - 18$

   $(x + 3)(x - 6)$

4. $x^2 + 16x + 64$

   $(x + 8)(x + 8)$

   $(x + 8)^2$

- # I can factor a polynomial:

Let's pause and practice before we move on.

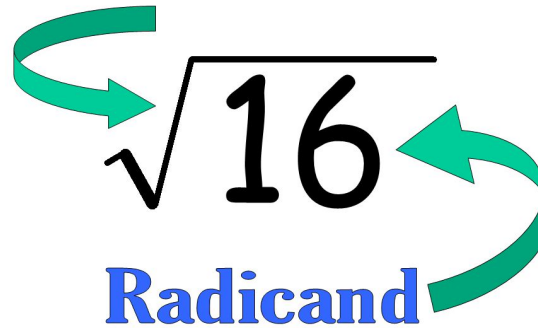- ## I can simplify single radicals:

What is a radical?

A square root symbol.

Radical Sign (square root sign)

$$\sqrt{16}$$

Radicand

What does it mean to simplify a radical?

Rewrite it so the radicand has no factors that are perfect squares.

- **I can simplify single radicals:**

What are perfect squares?

Numbers that have a square root.

Perfect Square	Why?
4	$\sqrt{4} = 2$
9	$\sqrt{9} = 3$
100	$\sqrt{100} = 10$

- **I can simplify single radicals:**

1) $\sqrt{63}$

$= \sqrt{9 \times 7}$

$= \sqrt{9} \times \sqrt{7}$

$= 3 \times \sqrt{7}$

$= 3\sqrt{7}$

Root	Perfect Square
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81
10	100

Root	Perfect Square
11	121
12	144
13	169
14	196
15	225
16	256
17	289
18	324
19	361
20	400

- ## I can simplify single radicals:

2) $\sqrt{96}$

$= \sqrt{16 \times 6}$

$= \sqrt{16} \times \sqrt{6}$

$= 4 \times \sqrt{6}$

$= 4\sqrt{6}$

2) $\sqrt{96}$

$= \sqrt{4 \times 24}$

$= \sqrt{4} \times \sqrt{24}$

$= 2 \times \sqrt{24}$

$= 2 \times \sqrt{4 \times 6}$

$= 2 \times \sqrt{4} \times \sqrt{6}$

$= 2 \times 2 \times \sqrt{6}$

$= 4\sqrt{6}$

Root	Perfect Square
1	1
2	4
3	9
4	16
5	25
6	36
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Root	Perfect Square
11	121
12	144
13	169
14	196
15	225
16	256
17	289
18	324
19	361
20	400

- ## I can simplify single radicals:

3) $\sqrt{288}$

Scott:

$= \sqrt{4 \times 72}$

$= 2\sqrt{72}$

Kevin:

$= \sqrt{144 \times 2}$

$= 12\sqrt{2}$

Andy:

$= \sqrt{96 \times 3}$

$= 48\sqrt{3}$

Think: Who is right? What did the others do wrong?

Share:

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- ## I can simplify single radicals:

You try…

1) $\sqrt{125}$

$5\sqrt{5}$

3) $\sqrt{200}$

$10\sqrt{2}$

2) $\sqrt{32}$

$4\sqrt{2}$

4) $\sqrt{147}$

$7\sqrt{3}$

Next Steps...

Learning Targets:

- I can multiply two binomials.
- I can factor a polynomial.
- I can simplify single radicals.

In Padlet:

I feel confident with…

I'd like more practice with…

Reflection

Padlet:
https://padlet.com/abbotte2/bs9wup6ahwwh