Learning Goal

Factoring... **so far**

We have factored a few types of standard form equations so far.

Simple Trinomials

$$y = x^2 + 2x - 15$$

To factor these, find two numbers

that _____ to -15

and _____ to +2.

Factoring... **so far**

We have factored a few types of standard form equations so far.

Difference of Squares

$$y = x^2 - 16$$

To factor these, find two numbers

that multiply to _____

and add to _____.

Factoring... *so far*

We have factored a few types of standard form equations so far.

Common Factor

$$y = 3x^2 + 6x$$

To factor these, first _____

each term by the greatest common

factor. In this case _____.

Factoring... *so far*

We have factored a few types of standard form equations so far.

Common Factor

$$y = -4x^2 + 20$$

To factor these, first _____

each term by the greatest common

factor. In this case _____.

Factoring when a ≠ 1

Factor

$$y = 4x^2 + 8x + 4$$

Uhoh! Our a-value is not 1!

When this happens, our first step is

to _____

from each term.

So... we just need to _____

each term by _____.

Factoring when a ≠ 1

Factor

$$y = \frac{4x^2}{4} + \frac{8x}{4} + \frac{4}{4}$$

$$y = 4(x^2 + 2x + 1)$$

Make sure you keep the 4!!

Look familiar? We've seen these before!

Now, all that's left is to factor the part inside the brackets just like before!

Factoring when a ≠ 1

Factor

$$4x^2 + 8x + 4$$

$$= 4(x^2 + 2x + 1)$$

Find two numbers that multiply to +1 and add to +2!

$$= 4(x + 1)(x + 1)$$

Just like yesterday, this is a
perfect square trinomial!
We can factor it once more!

Factoring when a ≠ 1

Factor

$$4x^2 + 8x + 4$$

$$= 4(x^2 + 2x + 1)$$

$$= 4(x + 1)(x + 1)$$

$$= 4(x + 1)^2$$

Steps to Factoring

$$y = 5x^2 - 5x - 30$$

1. "Factor Out" the a-value if possible.

2. Factor the new trinomial in brackets.

Factor It!

1. $2x^2 + 16x + 30$

Factor It!

2. $4x^2 + 20x - 24$

Factor It!

3. $3x^2 - 12x + 12$

Factor It!

4. $-3x^2 - 30x - 72$

Factor It!

5. $-2x^2 + 4x + 96$

Factor It!

6. $5x^2 + 20x$

Factor It!

7. $-7x^2 + 49x$

Factor It!

8. $3x^2 - 27$

Factor It!

9. $6x^2 - 96$

Factor It!

10. $-3x^2 + 48$