

What's Going On?

Checking In

Minds on

This is how we factor

Action!

Special Cases and Common Factoring

Consolidation Station Rotation

Learning Goal - I will be able to common factor!

Minds on

This is how we factor!

Explain, in words, how to factor

$$y = x^2 + 7x + 12$$

We need to find two numbers that add to $+7$ and multiply to $+12$.

$+3$ and $+4$

$$y = (x + 3)(x + 4)$$

FACTORED FORM

Action!

Special Cases

Factoring $y = x^2 + bx + c$ when $b = 0$

Factor

$$y = x^2 - 81$$

two numbers that add to 0
multiply to -81

This is called a difference
of squares

difference of squares

subtracting

$$(x + a)(x - a)$$

Action!

Special Cases

Factoring $y = x^2 + bx + c$
when both factors are the same!

Factor

$$y = x^2 + 6x + 9$$

factors are $+3$ and $+3$!

$$y = (x+3)(x+3)$$

$$y = (x+3)^2$$

This is called a

perfect

square trinomial

Action!

Common Factoring

Factoring $y = x^2 + bx + c$ when $c = 0$

Factor

$$y = \underbrace{x^2}_{x} + \underbrace{5x}_{x}$$

Our first step is to find a
Common Factor

Find what both terms have in common

Our common factor in this case is X

We must divide both terms by the
common factor.

$$y = \underline{x} (x + 5)$$

Action!

Common Factoring

Factoring $y = x^2 + bx + c$ when $c = 0$

Factor

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

The greatest common factor is 2x

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

Action!

Common Factoring

Factoring $y = x^2 + bx + c$ when $c = 0$

Factor

$$y = \frac{-3x^2}{-3x} + \frac{12x}{-3x}$$

The greatest common factor is $-3x$

$$y = -3x(x - 4)$$

Action!

Common Factoring

Determine the greatest common factor for each.

a) $x^2 + 9x$

$x(x + 9)$

b) $x^2 - 6x$

$x(x - 6)$

c) $3x^2 + 12x$

$3x(x + 4)$

d) $2x^2 + 10x$

$2x(x + 5)$

e) $-5x^2 - 20x$

$-5x(x + 4)$

f) $-4x^2 + 8x$

$-4x(x - 2)$

g) $-x^2 + 4x$

$-x(x - 4)$

h) $3x^2 - 15x$

$3x(x - 5)$

i) $2x^2 - 30x$

$2x(x - 15)$

Consolidation

Station Rotation