

Wednesday, September 14th!

Do Now:

Which method would you use to factor the following?



$$\textcircled{4}x^2 + 4x - 8$$

long abc

$$3mn + 7n - 6m - 14$$

grouping

Partner Quiz on Friday

Summative Test on Factoring on Tuesday!

1) $16x^2 - 81$

Is there a GCF? NoWhich method? diff. of perfect squares

Factor:

$$(4x+9)(4x-9)$$

2) $x^2 + 16x - 80$

Is there a GCF? NoWhich method? Short abc

Factor:

$$(x+20)(x-4)$$

-80	16
8, 10	
20, -4	→

3) $16m^3 + 250$

Is there a GCF? Yes: 2Which method? GCF, Sum of perfect cubes

Factor:

$$2(8m^3 + 125)$$

$$2(2m+5)(4m^2 - 10m + 25)$$

4) $5x^2 + 2x - 7$

Is there a GCF? NoWhich method? Longabc

Factor:

$$5x^2 + 5x - 7x - 7$$

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

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

$$\begin{array}{r|l} -35 & 2 \\ \hline -7,5 & \end{array}$$

5) $4m^2n + 6m - 14mn - 21$

Is there a GCF? NoWhich method? grouping

Factor:

$$4m^2n + 6m - 14mn - 21$$

$$2m(2mn+3) - 7(2mn+3)$$

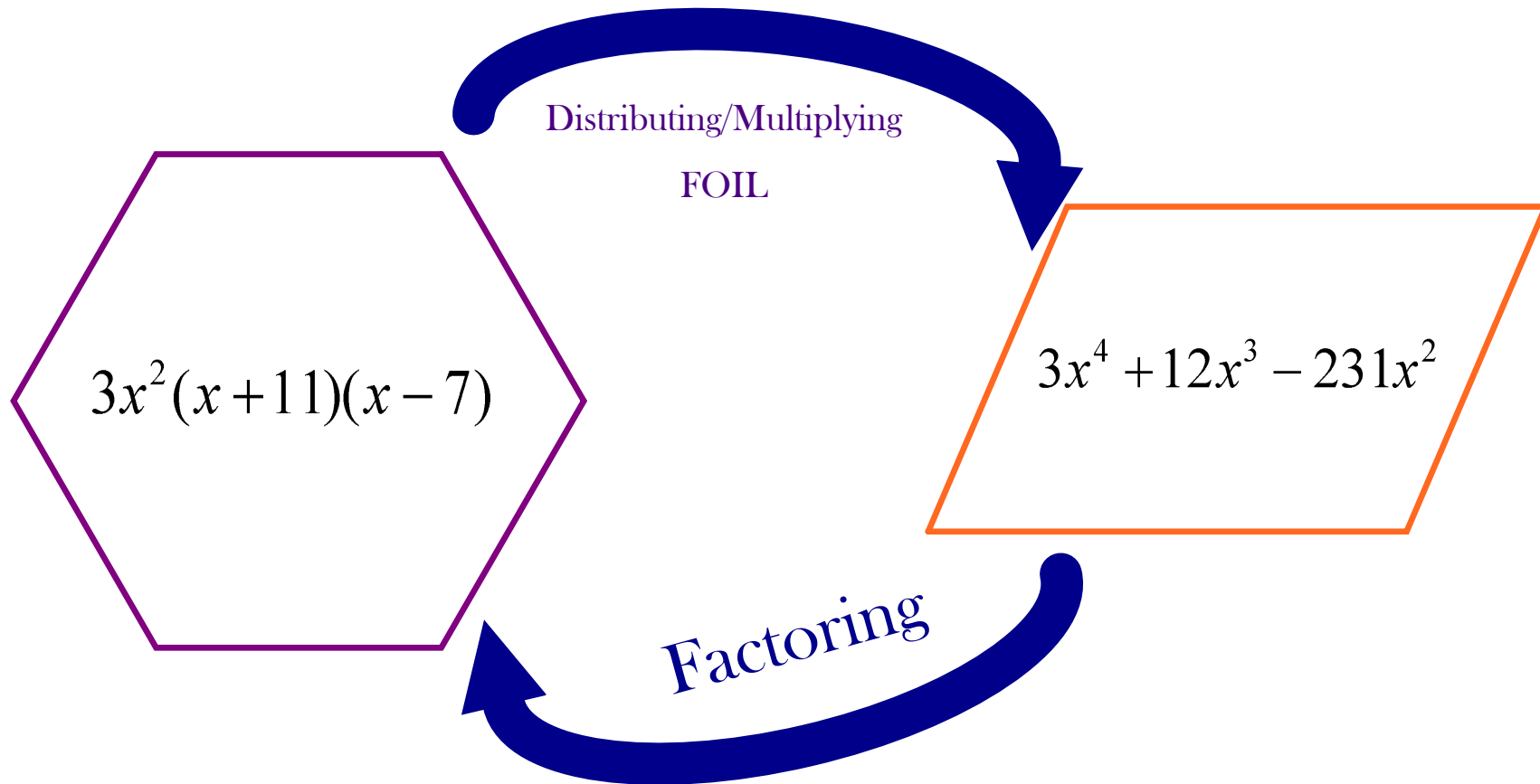
$$(2m-7)(2mn+3)$$



Instructional Focus: IF.4

I can factor special quartics x^4

I can rewrite a polynomial with degree 4
into a product of its factors



Factor the polynomial

$$x^2 - 3x - 4$$

$$(x - 4)(x + 1)$$

$$x^2 - 4x + x - 4$$

$$x^2 - 3x - 4$$



$$x^2 - 4$$

Trinomials with x^4
 $ax^4 + bx^2 + c$

$$x^4 - 3x^2 - 4$$

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

$$(x - 2)(x + 2)(x^2 + 1)$$

* Just keep factoring

$$(x^2 - 3)(x^2 + 1)$$

Factor the polynomial

$$x^4 - 10x^2 + 24$$

$$(x^2 - 6)(x^2 - 4)$$

$$(x^2 - 6)(x - 2)(x + 2)$$

$$\begin{array}{r|l} 24 & -10 \\ \hline -6, -4 & \\ \hline 12, -2 & \\ \hline -12, +2 & \\ & -24 \end{array}$$

Let's check!

Factor the polynomial

$$x^4 + 12x^2 + 27$$

$$(x^2 + 9)(x^2 + 3)$$



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

~~$x^2 - 3x + 3x - 9$~~
 $x^2 - 9$

$$\begin{array}{ccc} & 27 & \\ 9 & \times & 3 \\ & 12 & \end{array}$$

Factor the polynomial

$$2x^4 + 6x^3 - 108x^2$$

$$2x^2 (x^2 + 3x - 54)$$

$$2x^2 (x+9)(x-6)$$

$$\begin{array}{r} -54 \quad 3 \\ \hline 9 \cdot 6 \end{array}$$

Factor the polynomial

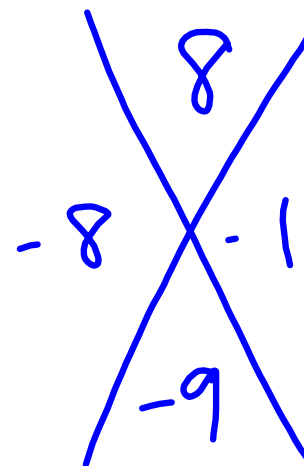
$$4x^4 - 18x^3 + 8x^2$$

$$2x^2 (2x^2 - 9x + 4)$$

$$2x^2 (2x^2 - 8x - 1x + 4)$$

$$2x^2 (2x(x-4) - 1(x-4))$$

$$2x^2 (2x-1)(x-4)$$



Factor the Polynomial.

$$4x^4 + 108x^2$$

$$4x^2(x^2 + 27)$$

$$4x^5 + 108x^2$$

$$4x^2(x^3 + 27)$$

$$4x^2(x+3)(x^2-3x+9)$$

Factor the polynomial

$$7x^4 - 14x^2 + 7$$

Homework: Choose one column of the worksheet to complete (Factoring special quartic polynomials).

Exit slip:

What is factoring?

In your group , factor your assigned polynomial.

When correct, write your solution on the poster paper to present to class tomorrow.

$$x^4 - 3x^2 - 18$$

$$2x^4 + 16x^2 + 30$$

$$-3x^4 - 6x^2 + 189$$

$$3x^4 + 31x^2 + 36$$

$$27x^4 - 9x^2 + 18$$

$$-4x^4 + 22x^2 - 30$$

$$7x^4 - 8x^2 - 12$$

$$-x^4 + 11x^2 - 18$$

$$2x^4 - 8x^3 - 90x^2$$

Homework:

IF.4 Factoring Special Quartics

1-20 all