

Warm-Up

1. Find the GCF of the following terms and expressions

a. 9 and 21 b. $9x^2y$ and $36x^3y^2$

3 $9x^2y$

2. Solve: $7(2x - 3)$

3. Simplify: $9(3 + 4x) + 2(4x + 5) =$

$27 + 36x + 8x + 10 = 44x + 37$

4. Solve for x: $8x + 4 = 44$

$8x = 40$ $x = 5$

5. Simplify: $3x^2 + 4x + 5x^2 - 3x =$

Key Vocabulary: Create your own definition for each of the terms in the examples below.

-**Monomial**: 7, -9, $2xy$, x^2 expression with ^{one} term.

-**Binomial**: $(5 + x)$, $(4x + 8y)$, $(5x^2 + 5y)$ expression with 2 terms

-**Trinomial**: $(x^2 + 7x + 9)$, $(6x^5 + 5x^3 - 8x)$ expression w/ 3 terms

-**Polynomial**: $(9x^5 + 5x^3 - 6x^2 + 7x - 8)$ expression w/ 4 or more terms.

• Find the GCF of each polynomial below:

1) $5x - 30$

$5(x - 6)$

2) $6a^2b + 3b^2$

$3b(2a^2 + b)$

3) $9x^3y - 21x^2y$

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

****When factoring always factor out the GCF first!****

What method do you use to factor polynomials?

$x^2 + 6x + 9$

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

box-methods

x-method

Factoring a Trinomial

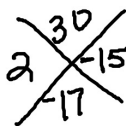
1. $x^2 + 10x + 16$
 $(x+8)(x+2)$



2. $x^2 + 8x + 12$
 $(x+2)(x+6)$



3. $x^2 - 17x + 30$
 $(x-2)(x-15)$



factors of 16
 2, 8
 4, 4
 16, 1

factors of 12
 2, 6
 3, 4
 12, 1

factors of 30
 15, 2
 3, 10
 5, 6
 30, 1

Factoring a Polynomial using the Difference of Squares

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

1. $x^2 - 64$
 $x = \sqrt{x^2} = x$ $(x-8)(x+8)$
 $y = \sqrt{64} = 8$

2. $16x^2 - 36$ $(4x-6)(4x+6)$
 $x = \sqrt{16x^2} = 4x$
 $y = \sqrt{36} = 6$

3. $9x^2 - 64$ $(3x-8)(3x+8)$
 $x = \sqrt{9x^2} = 3x$
 $y = \sqrt{64} = 8$

Factor Practice Side 1

Factor by Grouping!

1. Group the first and second term. Group the third and fourth term (include the sign!!)

$$(3n^3 - 12n^2) + (2n - 8)$$

2. Factor out the GCF for each group.

$$3n^2(n-4) + 2(n-4)$$

3. Group your GCFs and multiply them by what is left over.

$$(3n^2 + 2)(n-4)$$

Factor by Grouping!

1. Group the first and second term. Group the third and fourth term (include the sign!!)

$$(8t^3 + 14t^2)(+ 20t + 35)$$
$$\frac{8t^3}{2t^2} = 4t \quad \frac{14t^2}{2t^2} = 7$$

2. Factor out the GCF for each group.

$$2t^2(4t + 7) + 5(4t + 7)$$

3. Group your GCFs and multiply them by what is left over.

$$(2t^2 + 5)(4t + 7)$$

Factor by Grouping!

1. Group the first and second term. Group the third and fourth term (include the sign!!)

$$(20r^3 + 8r^2)(+ 15r + 6)$$

2. Factor out the GCF for each group.

$$4r^2(5r + 2) + 3(5r + 2)$$

3. Group your GCFs and multiply them by what is left over.

$$(4r^2 + 3)(5r + 2)$$

Take out your phones

Go to Kahoot.it

Type in the pin on the board:

<https://play.kahoot.it/#/lobby?quizId=5d3b831a-85a4-4468-b165-81568c50b8ae>

