Name: \_\_ Date: \_

# VeVb

# **GCF Factoring**

Introduction to Factoring out GCF

\*"Factor" simply means to UNDISTRIBUTE. \* 3 is a factor of 36

ov find factors 3x12 = 36

## **Distributed Version**

by factor	Factored	Version
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5x2 +15x	5×(x+3) 3 facto
$2\chi^3 - 8\chi^2$	$2x^{2}(x-4)$ $2 \cdot \times \cdot \times \cdot (\times -4)$
2x² - 4x	$2\times(X-2)$
$15x^2 - 5x + 30$	$5(3x^2-X+6)$

More formal Definition:

Factoring: Writing the polynomial as a product.

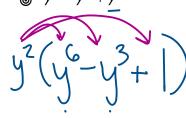
#### Steps to Factoring Out a GCF:

- ★ Find the GCF of all its terms (number and/or variables). For variables ALL the terms must have the variable. Choose the smallest exponent!
- ★ The GCF goes to the LEFT!
- ★ Write the polynomial as a product by dividing the original terms of the polynomial by the GCF.
- ★ The remaining factors in each term will form a polynomial. You'll always have the same number of terms you started with.

## Factor using a GCF:

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

$$6x^3 - 9x^2 + 12x$$



#### PRACTICE: Factor each polynomial using a GCF.

1. 
$$10x + 45$$

2. 
$$28x - 63$$

3. 
$$18a + 42$$

4. 
$$8x + 24$$

5. 
$$18x^2 - 15x + 39$$

6. 
$$27a^2 + 81$$

7. 
$$72a^8 + 33a^5 - 42a^3$$

8. 
$$15x^7 + 30x^6 - 45x^3$$

9. 
$$4x^3 + 16x^2 - 44$$

10. 
$$14x^2 + 7x - 42$$