

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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## GCF Factoring

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Introduction to Factoring out GCF

★“Factor” simply means to **UNDISTRIBUTE**.★

Distributed Version	Factored Version
	$5x(x + 3)$
	$2x^2(x - 4)$
$2x^2 - 4x$	
$15x^2 - 5x + 30$	

More formal Definition:

⊙ **Factoring:** *Writing the polynomial as a product.*

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### 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.

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### Factor using a GCF:

⊙  $4x + 6y$

⊙  $6x^3 - 9x^2 + 12x$

⊙  $y^8 - y^5 + y^2$

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

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