

Name:

Period:

Date:

PARTNERS: Factoring out the GCF

Distributing is the process of multiplying a term in front of parenthesis to each term inside the parenthesis. For example, $14x(x + 2)$ becomes $14x(x) + 14x(2)$ when you distribute the $14x$ to each of the terms in the parenthesis. Then simplifying gives you $14x^2 + 28x$. Doing this process in reverse is called **factoring**.

When you factor a polynomial, you are trying to find the quantities that you multiply together in order to create the polynomial. The **greatest common factor** (GCF) for a polynomial is the largest monomial that is a factor of (divides) each term of the polynomial. Note: The GCF must be a factor of **EVERY** term in the polynomial.

The hardest part of factoring out a GCF is determining what the greatest common factor of each term in the polynomial is. To factor $14x^2 + 28x$, you could find the GCF this way...

Factor the GCF from the polynomials below.

$245x^2 - 315x$	$240x^2 - 180x + 45$	$4x(x + 7) - 10(x + 7)$

Partner Practice: Factor out the GCF from the quadratic equations on one side while your partner does the other side. Both sides should have the same GCF but different factored forms.

	GCF	
1] $6x^2 + 15$		1] $12x^2 - 9$
2] $32x^2 - 80x$		2] $48x^2 + 64x$
3] $72x^2 + 24x - 144$		3] $96x^2 - 48x + 168$

	GCF	
4] $224x^2 + 280x - 336$		4] $392x^2 - 168x + 112$
5] $264x^2 - 308x$		5] $176x^2 + 132x$
6] $156x^2 + 13x$		6] $143x^3 - 91x^2 + 13x$
7] $10x(3x) - 7(3x)$		7] $6x(3x) + 5(3x)$
8] $6x(x + 1) + 3(x + 1)$		8] $3x(x + 1) + 6(x + 1)$
9] $3x(x - 6) - (x - 6)$		9] $7x(x - 6) + (x - 6)$
10] $6(35x^2 + 10) - 18$		10] $15(2x^2 - 14) + 12x^2$