Factoring

Factoring Out the Common Factor

Example: Break the following expressions into individual factors.

18

24

$8x^3$

$15xy^2$

Greatest Common Factor (GCF)

The **greatest common factor (GCF)** of two or more polynomial terms is the largest factor that will divide all of the terms evenly.

Example: Break the expressions $10x^3y^2 \ and \ 12xy^5$ down into individual factors. What factors are common to both expressions?

Example: Find the GCF (greatest common factor) of the list of terms.

$2x^8,\ 4x^4,\ 12x^3$	$15t^2,\ 10t,\ 20$	$x^2, y^2, 4$
$x^4y^3,\ x^2y^2,\ xy^5$	$24a^2b^2,\ 32a^3b^2,\ 60a^4b^4$	

Example: For the expression 2x+10, what is the GCF? How can this polynomial be factored?

Example: Factor out the greatest common factor from each polynomial.

$10x^2 - 6$

$6x^2 + 12x - 21$

$28x^2 - 20x - 4$

$-2x^2 + 6x - 10$

Example: Factor out the greatest common factor from each polynomial.

$8x^2 + 4x$

$10x^3y^2 - 12xy^5$

$6a^2b^2 - 4ab + 8ab^2$

$-200x^7y^4 - 400x^5y^9$

$9\pi r^2 + 12\pi r$

$x^2 + 2y^2$