



Factor Out the (GCF) Greatest Common Factor

Steps:

- 1) Find the GCF, if possible
 - a. Find the greatest integer that all the terms have in common.
 - b. Do all terms have a variable? If so, find the variable with the smallest exponent.
- 2) Divide each term by the GCF. Don't forget the quotient rule for exponents!
- 3) Rewrite the polynomial as a product of the GCF and the remaining terms.

Quotient Rule

$$\frac{x^a}{x^b} = x^{a-b}$$

Factor out the GCF, if possible.

1. $4x + 12$

2. $x^3 - 5x$

3. $3x^2 - 9x - 3$

4. $5x^2 - 10x + 5$

5. $2x - 11$

6. $-7x^3 - 14x^2$

How can you check to see if you factored out the GCF correctly?

Factor Trinomials of the Form $x^2 + bx + c$

Steps:

- 1) List the factor pairs of $a \cdot c$.
- 2) Find the factor pair whose sum equals b .
- 3) Rewrite the trinomial as the product of two binomials, $(x + 1^{\text{st}} \text{ factor})(x + 2^{\text{nd}} \text{ factor})$.

Factor each polynomial.

1. $x^2 + 7x + 6$

2. $x^2 + 5x + 4$

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

4. $x^2 + 5x - 6$

5. $x^2 + 10x + 16$

6. $x^2 - 3x - 18$