

Greatest Common (GCF) Factor

Steps:

1. Factor each term down to prime numbers ex: 1, 2, 3, 5, 7, 11, 13, 17...
2. Find the Common Factors
3. Pull out the common factors
4. Ask yourself "What's left?"
5. Set up factors as GCF (what's left?)

- If the leading coefficient is negative you MUST pull out the negative with the GCF. Watch out for the sign changes!

Grouping

Steps:

1. Check for GCF@the end.
2. Group with Parentheses the first two terms and the last two terms.
3. Factor out the GCF from each group (remember the sign for the second group).
4. Check that "what's left" is the same for both groups.
5. Set up your two binomials as (what's left)(GCF)

EXAMPLE:

DISTRIBUTE

$$8(x + 1)$$

GCF

$$\frac{8x}{8} + \frac{8}{8}$$

$$8(x + 1)$$

WAYS TO FIND GCF

FACTOR LINES

6, 12, 24

1 2 3

1 2 3 4 6 12

1 2 3 4 6 8 12 24

CALCULATOR

1. TYPE

"gcd(##,##)"

2. HIT ENTER

2 #'s

GCF

WHAT IS THE BIGGEST THING THEY HAVE
IN COMMON

$$\frac{2x^3 + 6x^2}{2x^2 \quad 2x^2}$$
$$2x^2 (x + 3)$$

GCF

WHAT IS THE BIGGEST THING THEY HAVE
IN COMMON

$$\frac{24x^2}{8} + \frac{32x}{8} + \frac{16}{8}$$

$$8(3x^2 + 4x + 2)$$

GROUPING & GCF

WHAT IS THE BIGGEST THING THEY HAVE
IN COMMON

$$\left(\frac{2x^3}{x^2} + \frac{3x^2}{x^2} + \frac{6x}{3} + \frac{9}{3} \right)$$

$$x^2(2x+3) + 3(2x+3)$$

$$(x^2+3)(2x+3)$$