

2-2 Factoring (GCF and Grouping)

Objectives:

I can factor the greatest common factor out of an expression.

I can factor an expression by grouping.

gcf: biggest thing that can be divided evenly out of all terms

6, 4

4, 8

Find the greatest common factor (GCF) of the terms

$$4x, 12$$

$$4$$

$$6x^3, 12x^2, 15x$$

$$3x$$

$$4x^3y^4, 8x^2y^3, 12xy^2$$

$$4xy^2$$

Factor out the GCF

$$4a^2b^2 - 10ab^3 + 18a^3b^4$$

$$2ab^2(2a - 5b + 9a^2b^2)$$

Factor out the GCF

$$6y^3 - 14y^2 + 10y$$

$$2y(3y^2 - 7y + 5)$$

Factor out the GCF

$$4x^3 + 6x^2 + 2x$$

Factor out the GCF

$$-2b^3 + 10b^2 + 8b$$

$$2b(-b^2 + 5b + 4)$$

$$-2b(b^2 - 5b - 4)$$

Factor out the GCF

$$-5y^2 + 10y$$

$$-5y(y-2)$$

$$5y(-y+2)$$

Factor out the Greatest Common Binomial Factor

$$\underline{4}x(\underline{x-3}) + \underline{5}(\underline{x-3})$$

$$(4x+5)(x-3)$$

Factor out the Greatest Common Binomial Factor

$$\underline{4}a(\underline{a-3}) + \underline{3}(\underline{a-3})$$

$$(4a+3)(a-3)$$

Factor by grouping : 4 TERMS

$$(4x - 4y) + (ax - ay)$$

$$4(x - y) + a(x - y)$$

1. Group

$$(4 + a)(x - y)$$

2. Factor GCF
out of each

3. Factor Binomial
out

Factor by grouping

$$(6x^2 + 9x)(-10x - 15)$$

$$3x(2x+3) - 5(2x+3)$$

$$(3x-5)(2x+3)$$

Factor COMPLETELY by grouping

$$(6x^2 + 8x) + (18x + 24)$$

Factor by grouping

$$6z^2 + 2z + 9z + 3$$

Factor by grouping

$$2x^2 + 2x + x + 1$$

