

Factoring Using a GCF

Greatest Common Factor (GCF):

The biggest # that
all terms have in
common

Example 1: $\underline{24}x^4 - \underline{12}x^3 + \underline{18}x^2$

$$6 \mid 4x^4 - 2x^3 + 3x^2$$

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

$$\boxed{6x^2 (4x^2 - 2x + 3)}$$

Example 2: $14x^3y^2 + 7x^2y - xy$

$$x(14x^2y^2 + 7xy - y)$$

$$y(14x^2y + 7x - 1)$$

$$xy(14x^2y + 7x - 1)$$

Example 3: $50p^2 - 20pr$

$$10(5p^2 - 2pr)$$

$$p(5p - 2r)$$

$$\boxed{10p(5p - 2r)}$$

Example 4: $-18m^7 - 6m^5 + 12m^3$

$$\cancel{6}(-3m^7 - 1m^5 + 2m^3)$$

$$-6(3m^7 + 1m^5 - 2m^3)$$

$$m^3(3m^4 + m^2 - 2)$$

$$\boxed{-6m^3(3m^4 + m^2 - 2)}$$

Example 5: $-9g^3h^8 + 9g^4h^7k + 15g^7h^3k^2$

$$3(-3g^3h^8 + 3g^4h^7k + 5g^7h^3k^2)$$

$$g^3(-3h^8 + 3gh^7k + 5g^4h^3k^2)$$

$$h^3(-3h^5 + 3gh^4k + 5g^4k^2)$$

$$\boxed{3g^3h^3(-3h^5 + 3gh^4k + 5g^4k^2)}$$

Example 6: $2x^3 + 9$

Homework Page 3.1 in Packet