

MULTIPLY THE FOLLOWING

$$\textcircled{1} \quad 4(x^2 - 3x + 5) = 4x^2 - 12x + 20$$

$$\textcircled{2} \quad -2x(x - 6) = -2x^2 + 12x$$

$$\textcircled{3} \quad 5x(4x - 1) = 20x^2 - 5x$$

$$\textcircled{4} \quad 10x^2(4x^3 + 6x - 2) = 40x^5 + 60x^3 - 20x^2$$

$$\textcircled{5} \quad xy(x^2y^2 + xy + y^2) = x^3y^3 + x^2y^2 + xy^3$$

FACTORING THE FOLLOWING BY GCF (GREATEST COMMON FACTOR)

FACTORING IS THE OPPOSITE OF MULTIPLYING (DISTRIBUTING)

EXAMPLE 1: $\frac{3x^2}{3} - \frac{9x}{3} + \frac{15}{3}$

GCF: 3

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

- GREATEST NUMBER THAT DIVIDES OUT OF EVERY TERM

- GREATEST VARIABLE THAT DIVIDES OUT OF EVERY TERM

EXAMPLE 2: $\frac{-4x^2}{-4x} + \frac{24x}{-4x}$

$$-4x(x - 6)$$

IF LEADING TERM IS NEGATIVE MAKE your GCF NEGATIVE

Example 3: $\frac{6x^5}{3} + \frac{3x^2}{3} + \frac{18}{3}$

$$3(2x^5 + x^2 + 6)$$

example 4: $\frac{x^7}{x^2} + \frac{5x^4}{x^2} + \frac{x^2}{x^2}$

$$x^2(x^5 + 5x^2 + 1)$$