

## Review Exercise Set 1

Exercise 1: Find the greatest common factor (GCF) for the following set of terms.

$$5x^5, 3x^2, x^4$$

Exercise 2: Find the greatest common factor (GCF) for the following set of terms.

$$24a^3b^2, 36a^2bc, 12ab^3c^2$$

Exercise 3: Completely factor the following expression.

$$24x^3y^2 - 6xy + 18xy^3$$

Exercise 4: Completely factor the following expression.

$$5x(a - b) + y(a - b)$$

Exercise 5: Completely factor the following expression.

$$2a^2c(a - b) + 4ac^2(a - b)$$

## Review Exercise Set 1 Answer Key

Exercise 1: Find the greatest common factor (GCF) for the following set of terms.

$$5x^5, 3x^2, x^4$$

$$5x^5 = 5 * x * x * x * x * x$$

$$3x^2 = 3 * x * x$$

$$x^4 = x * x * x * x$$

The GCF among the terms is  $x * x$  or  $x^2$ .

Exercise 2: Find the greatest common factor (GCF) for the following set of terms.

$$24a^3b^2, 36a^2bc, 12ab^3c^2$$

$$24a^3b^2 = 2 * 2 * 2 * 3 * a * a * a * b * b$$

$$36a^2bc = 2 * 2 * 3 * 3 * a * a * b * c$$

$$12ab^3c^2 = 2 * 2 * 3 * a * b * b * b * c * c$$

The GCF among the terms is  $2 * 2 * 3 * a * b$  or **12ab**.

Exercise 3: Completely factor the following expression.

$$24x^3y^2 - 6xy + 18xy^3$$

Find the GCF.

$$24x^3y^2 = 2 * 2 * 2 * 3 * x * x * x * y * y$$

$$6xy = 2 * 3 * x * y$$

$$18xy^3 = 2 * 3 * 3 * x * y * y * y$$

The GCF is **6xy**

Factor out the GCF by dividing each term by the GCF. The remainder is what would go inside the parenthesis

$$\frac{24x^3y^2}{6xy} = 4x^2y; \quad \frac{6xy}{6xy} = 1; \quad \frac{18xy^3}{6xy} = 3y^2$$

$$24x^3y^2 - 6xy + 18xy^3 = \mathbf{6xy(4x^2y - 1 + 3y^2)}$$

Exercise 4: Completely factor the following expression.

$$5x(a - b) + y(a - b)$$

Find the GCF.

$$5x(a - b) = 5 * x * (\mathbf{a - b})$$

$$y(a - b) = y * (\mathbf{a - b})$$

The GCF is **(a - b)**

Factor out the GCF.

$$\frac{5x(a - b)}{(a - b)} = 5x; \quad \frac{y(a - b)}{(a - b)} = y$$

$$5x(a - b) + y(a - b) = (\mathbf{a - b})(\mathbf{5x + y})$$

Exercise 5: Completely factor the following expression.

$$2a^2c(a - b) + 4ac^2(a - b)$$

Find the GCF.

$$2a^2c(a - b) = \mathbf{2 * a * a * c * (a - b)}$$

$$4ac^2(a - b) = \mathbf{2 * 2 * a * c * c * (a - b)}$$

The GCF is **2ac(a - b)**

Factor out the GCF.

$$\frac{2a^2c(a - b)}{2ac(a - b)} = a; \quad \frac{4ac^2(a - b)}{2ac(a - b)} = 2c$$

$$2a^2c(a - b) + 4ac^2(a - b) = \mathbf{2ac(a - b)(a + 2c)}$$