



Vocabulary: Factoring Special Products



Vocabulary

- Difference of two squares – a binomial consisting of two perfect squares subtracted.
 - A difference of two squares can always be factored: $a^2 - b^2 = (a + b)(a - b)$.
 - Example: $x^2 - 9 = x^2 - 3^2 = (x + 3)(x - 3)$
 - Example: $25v^2 - 4 = (5v)^2 - 2^2 = (5v + 2)(5v - 2)$
- Factor – to express a number or polynomial as a product.
 - Example: $20 = 2 \cdot 2 \cdot 5 = 2^2 \cdot 5$
 - Example: $x^2 - 9 = (x + 3)(x - 3)$
 - The values multiplied together are called *factors*.
- Greatest common factor (GCF) – the largest number or variable expression that divides evenly into a number or polynomial.
 - For example, 6 is the GCF of 18 and 24.
 - For example, $4x$ is the GCF of $4x^3 - 8x^2 + 20x$.
- Monomial – a number, a variable, or the product of numbers and variables.
 - Some examples of monomials are 7, y^5 , $\frac{4x}{3}$, and $-9ab^2$.
 - *Monomials* can also be called *terms*.
 - Any exponents in a monomial must be positive integers.
- Perfect-square trinomial – a trinomial whose factored form is the square of a binomial.
 - Below are two examples of perfect-square trinomials.
 - $b^2 + 6b + 9$ is a perfect-square trinomial: $b^2 + 6b + 9 = (b + 3)^2$
 - $4a^2 - 20a + 25$ is a perfect-square trinomial: $4a^2 - 20a + 25 = (2a - 5)^2$
 - All perfect-square trinomials fit one of two patterns:
 - $a^2 + 2ab + b^2 = (a + b)^2$
 - $a^2 - 2ab + b^2 = (a - b)^2$
- Polynomial – an expression consisting of one or more monomials added to or subtracted from each other.
 - A *binomial* is a polynomial with exactly two terms.
 - Examples: $5c^3 - 6$, $2xy + 7x^2$
 - A *trinomial* is a polynomial with exactly three terms.
 - Examples: $2m^2 - 6m + 5$, $8a^2 + 21ab + 34b^2$

