

**difference of squares:** an expression of the form  $a^2 - b^2$  that involves the subtraction of two perfect squares

Example:  $x^2 - 4$ ,  $y^2 - 25$ ,  $1 - a^2$  are all difference of squares.

**distributive property:** the property stating that a product can be written as a sum or difference of two products

Example: The property states  $a(b + c) = ab + ac$  or  $a(b - c) = ab - ac$ .

**extraneous root:** a solution to a rational equation that is not permissible in the original equation

**factor:** any number or variable that, when multiplied with one or more other numbers or variables, forms a product

Example: The factors of 15 are 1, 3, 5 and 15, and the factors of  $x^2y$  are  $x$ ,  $x$  and  $y$ .

**greatest common factor (GCF):** the largest factor shared by two or more terms

Example: The GCF of 14 and 36 is 2, and the GCF of  $x^2yz$  and  $x^2z^3$  is  $x^2z$ .

**inadmissible solution:** a solution that is permissible in the original equation but is not valid in the context of the problem

**inadmissible value:** a value for a variable in a rational expression that does not work in the context of the problem

Example: If  $\frac{100}{x}$  is a rational expression that represents the length of a rectangle with width  $x$ , then  $x = 0$  is a non-permissible value and  $x < 0$  represents the inadmissible values. A rectangle with a negative width does not make sense.

**lowest common multiple:** the lowest multiple that is the same for two numbers

Example: The lowest common multiple of 12 and 21 is 84.

**non-permissible value:** any value for a variable that makes an expression undefined; for rational expressions, any value that results in a denominator of zero

Example: In  $\frac{x+2}{x-3}$ , you must exclude the value for which  $x - 3 = 0$ , giving a non-permissible value of  $x = 3$ .

**perfect square:** a number that can be expressed as the product of two equal factors

Example: 36 is a perfect square because  $36 = 6 \times 6$ .

**polynomial:** an algebraic expression formed by adding or subtracting terms

Example:  $x + 5$ ,  $2d - 2$ ,  $3s^2 + 5s - 4$  are polynomials.

**rational equation:** an equation that involves one or more rational expressions

Example:  $\frac{5}{x} = \frac{4}{x+2}$  is a rational equation.

**rational expression:** a fraction that has a polynomial for both the numerator and the denominator

Example:  $\frac{1}{x}$ ,  $\frac{m}{m+1}$  and  $\frac{y^2 + 2x - 1}{4y + 4}$  are rational expressions.

**term:** an individual part of a mathematical expression

Example: The expression  $2x - 5$  is made of the terms  $2x$  and  $-5$ .