# Glossary

**absolute value** (p. 65) The distance between the origin and the point representing the real number. The symbol $|a|$ represents the absolute value of a number $a$.

**algorithm** (p. 39) A step-by-step process used to solve a problem.

**asymptote** (p. 692) A line that a graph approaches. The distance between the graph and the line approaches zero.

**axioms** (p. 758) A The basic properties of mathematics that mathematicians accept without proof.

**axis of symmetry of a parabola** (p. 518) The line passing through the vertex that divides the parabola into two symmetric parts. The two symmetric parts are mirror images of each other. *See also* parabola.

**B**

**bar graph** (p. 41) A graph that organizes a collection of data by using horizontal or vertical bars to display how many times each event or number occurs in the collection.
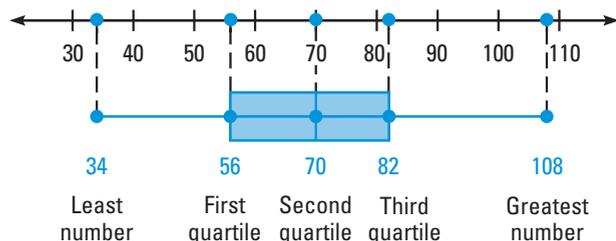
**base number of a percent equation** (p. 649) The number that is being compared *to* in any percent equation. The number $b$ in the verbal model $a$ is $p$ percent of $b$.

**base of a power** (p. 9) The number or variable that is used as a factor in repeated multiplication. For example, in the expression $4^6$, 4 is the base.

**best-fitting line** (p. 292) A line that best fits the data points on a scatter plot.

**binomial** (p. 576) A polynomial with two terms.

**box-and-whisker plot** (p. 375) A data display that divides a set of data into four parts. The box represents half of the data. The segments, or whiskers, extend to the least and greatest data items.



| 34 | 56 | 70 | 82 | 108 |
|---|---|---|---|---|
| Least number | First quartile | Second quartile | Third quartile | Greatest number |

**C**

**center of a hyperbola** (p. 692) The point $(h, k)$ in the graph of the rational function $f(x) = \dfrac{a}{x - h} + k$.

**closed set** (p. 113) A set of numbers is closed under an operation if applying the operation to any two numbers in the set results in another number in that set. This set is said to have closure.

**coefficient** (p. 102) A number multiplied by a variable in a term. The number is the coefficient of the variable.

**completing the square** (p. 730) The process of rewriting a quadratic equation so that one side is a perfect square trinomial.

**compound inequality** (p. 346) Two inequalities connected by *and* or *or*.

**conclusion** (pp. 187, 739) The "then" part of an if-then statement. In the statement "If $p$, then $q$," $q$ is the conclusion.

**conjecture** (p. 759) A statement that is thought to be true but is not yet proved. Often it is a statement based on observation.

**conjugates** (p. 717) The expressions $\left(a + \sqrt{b}\right)$ and $\left(a - \sqrt{b}\right)$ are conjugates of each other.

**consecutive integers** (p. 149) Integers that follow each other in order. For example, 4, 5, 6.

**constant terms** (p. 102) Terms with no variable factors. For example, in $x + 2 - 5x - 4$, the constant terms are 2 and $-4$.

**constant of variation** (p. 234) The constant in a variation model. Represented by the variable $k$. *See also* direct variation *and* inverse variation.

**converse of a statement** (p. 739) A related statement in which the hypothesis and conclusion are interchanged. The converse of the statement "If $p$, then $q$" is "If $q$, then $p$."
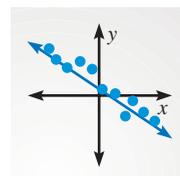
**coordinate plane** (p. 203) A plane formed by two real number lines that intersect at a right angle.
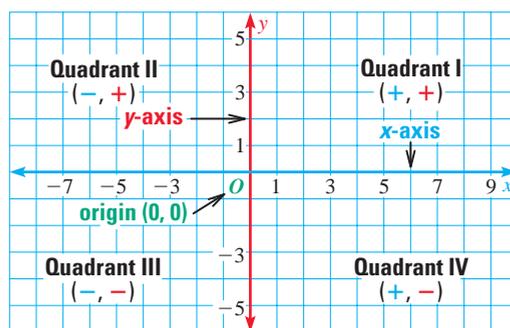


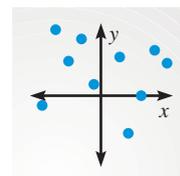**correlation** (p. 295) The relationship between two data sets.
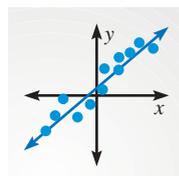


| Positive correlation | Negative correlation | Relatively no correlation |
|---|---|---|

**cosine** (p. 752) *See* trigonometric ratio.

**counterexample** (p. 66) An example used to show that a given statement is false.

# D

**data** (p. 40) Information, facts, or numbers used to describe something.

**decay factor** (p. 484) The expression $1 - r$ in the exponential decay model where $r$ is the decay rate. *See also* exponential decay.

**decay rate** (p. 484) The variable $r$ in the exponential decay model. *See also* exponential decay.

**deductive reasoning** (p. 187) Reasoning where a conclusion is reached based on facts, definitions, rules, or properties.

**degree of a polynomial** (p. 576) The largest degree of the terms of the polynomial.

**degree of a term** (p. 576) The exponent of the variable of the term.

**direct variation** (pp. 234, 656) The relationship of two variables $x$ and $y$ if there is a nonzero number $k$ such that $y = kx$, or $\frac{y}{x} = k$. The variables $x$ and $y$ *vary directly*.

**discriminant** (p. 541) The expression $b^2 - 4ac$ where $a$, $b$, and $c$ are coefficients of the quadratic equation $ax^2 + bx + c = 0$.

**distance formula** (p. 745) The distance $d$ between the points $(x_1, y_1)$ and $(x_2, y_2)$ is
$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}.$$

**distributive property** (p. 100) The product of $a$ and $(b + c)$: $a(b + c) = ab + ac$ or $(b + c)a = ba + ca$. The product of $a$ and $(b - c)$: $a(b - c) = ab - ac$ or $(b - c)a = ba - ca$.

**domain of a function** (p. 47) The collection of all input values.

# E

**entry or element of a matrix** (p. 86) Each number in the matrix. *See also* matrix.

**equation** (p. 24) A statement formed when an equal sign is placed between two expressions.

**equivalent equations** (p. 132) Equations with the same solutions as the original equation.

**equivalent inequalities** (p. 335) Inequalities with the same solution(s).

**evaluating the expression** (p. 3) To find the value of an expression by replacing each variable by a number.

**event** (p. 114) A collection of outcomes.

**experimental probability** (p. 115) A probability that is based on repetitions of an actual experiment.

**exponent** (p. 9) The number or variable that represents the number of times the base is used as a factor. For example, in the expression $4^6$, 6 is the exponent.

**exponential decay** (p. 484) A quantity that is decreasing by the same percent in each unit of time $t$ where $C$ is the initial amount.

Exponential decay model: $y = C(1 - r)^t$

**exponential function** (p. 458) A function of the form $y = ab^x$, where $b > 0$ and $b \neq 1$.

**exponential growth** (p. 477) A quantity that is increasing by the same percent in each unit of time $t$ where $C$ is the initial amount.

Exponential growth model: $y = C(1 + r)^t$

**extraneous solution** (pp. 644, 723) A trial solution that does not satisfy the original equation.

**extremes of a proportion** (p. 643) In the proportion $\frac{a}{b} = \frac{c}{d}$, $a$ and $d$ are the extremes.

# F

**factor** (p. 777) The numbers and variables that are multiplied in an expression. For example, 4 and 9 are factors of 36 and 6 and $x$ are factors of $6x$.

**factor a polynomial completely** (p. 625) To write a polynomial as the product of:
• monomial factors
• prime factors with at least two terms.

**factor a quadratic expression** (p. 604) To write a quadratic expression as the product of two linear expressions.

**factored form of a polynomial** (pp. 597, 625) A polynomial that is written as the product of two or more prime factors.

**favorable outcomes** (p. 114) The outcomes for a particular event that are being considered. *See also* outcomes.

**FOIL pattern** (p. 585) A pattern used to multiply two binomials. Multiply the First, Outer, Inner, and Last terms.

For example, $(x + 4)(2x + 3) = 2x^2 + 3x + 8x + 12$
$$= 2x^2 + 11x + 12$$

**formula** (p. 174) An algebraic equation that relates two or more real-life quantities.

**function** (p. 46) A rule that establishes a relationship between two quantities, called the input and the output. For each input, there is exactly one output.

**function form** (p. 176) A two-variable equation is written in function form if one of its variables is isolated on one side of the equation. The isolated variable is the output and is a function of the input.

**function notation** (p. 257) A way to name a function that is defined by an equation. For an equation in $x$ and $y$, the symbol $f(x)$ replaces $y$ and is read as "the value of $f$ at $x$" or simply as "$f$ of $x$."

# G

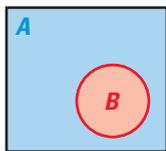**generalization** (p. 187) A conclusion based on several observations.

**geometric mean** (p. 723) The geometric mean of $a$ and $b$ is $\sqrt{ab}$.

**geometric probability** (p. 666) The probability $P$ that an object is tossed onto Region $A$ and lands in Region $B$ where Region $B$ is contained in Region $A$ is
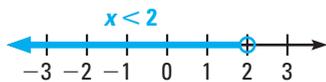


$$P = \frac{\text{Area of Region } B}{\text{Area of Region } A}.$$

**graph of an equation in two variables** (p. 210) The set of *all* points $(x, y)$ that are solutions of the equation.
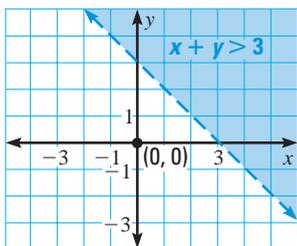
**graph of a function** (p. 257) The set of all points $(x, f(x))$, where $x$ is in the domain of the function.

**graph of a linear inequality in one variable** (p. 334) The set of points on a number line that represents all solutions of the inequality.



**graph of a linear inequality in two variables** (p. 360) The graph of all ordered pairs $(x, y)$ that are solutions of the inequality.



**graph of a number** (p. 63) The point that corresponds to a number.

**graph of an ordered pair** (p. 203) The point in the plane that corresponds to an ordered pair $(x, y)$.

**graph of a quadratic inequality** (p. 548) The graph of all ordered pairs $(x, y)$ that are solutions of the inequality.
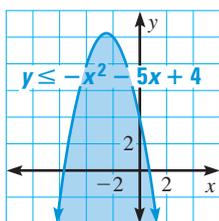


**graph of a system of linear inequalities** (p. 432) The graph of all solutions of the system.

**grouping symbols** (p. 10) Symbols such as parentheses ( ) or brackets [ ] that indicate the order in which operations should be performed. Operations within the innermost set of grouping symbols are done first.

**growth factor** (p. 477) The expression $1 + r$ in the exponential growth model where $r$ is the growth rate.

**growth rate** (p. 477) The variable $r$ in the exponential growth model. *See also* exponential growth.
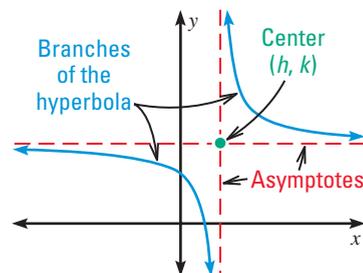
# H

**half-plane** (p. 360) In a coordinate plane, the region on either side of a boundary line.

**hyperbola** (p. 692)
The graph of a rational function
$$f(x) = \frac{a}{x - h} + k,$$
whose center is $(h, k)$.



**hypotenuse** (p. 738) The side opposite the right angle in a right triangle.

**hypothesis** (pp. 187, 739) The "if" part of an if-then statement. In the statement "If $p$, then $q$," $p$ is the hypothesis.

# I

**identity** (p. 155) An equation that is true for all values of the variables.

**if-then statement** (p. 187) A statement of the form "If $p$, then $q$," where $p$ is the *hypothesis* and $q$ is the *conclusion*.

**indirect proof** (p. 760) A type of proof where it is first assumed that the statement is false. If this assumption leads to an impossibility, then the original statement has been proved to be true.

**inductive reasoning** (p. 187) A form of reasoning in which a conclusion is reached based on several observations.

**inequality** (p. 26) A sentence formed when an inequality symbol is placed between two expressions.

**initial amount** (pp. 477, 484) The variable $C$ in the exponential growth or decay model. *See also* exponential growth *and* exponential decay.

**input** (p. 46) *See* function.

**input-output table** (p. 46) A table used to describe a function by listing the inputs and outputs.

**integers** (p. 63) Any of the numbers ... $-3$, $-2$, $-1$, $0$, $1$, $2$, $3$, ....

**intersecting lines** (p. 426) Two lines that share exactly one point.

**inverse operations** (p. 132) Operations that undo each other, such as addition and subtraction.

**inverse variation** (p. 656) The relationship of two variables $x$ and $y$ if there is a nonzero number $k$ such that $xy = k$, or $y = \dfrac{k}{x}$. The variables $x$ and $y$ *vary inversely*.

**irrational number** (p. 504) A number that cannot be written as the quotient of two integers.

## L

**leading coefficient** (pp. 505, 576) The coefficient of the first term in a polynomial written in standard form.

**least common denominator, LCD** (p. 677) The least common multiple of the denominators of two or more fractions.

**legs of a right triangle** (p. 738) The two sides of a right triangle that are not opposite the right angle.

**like terms** (p. 102) Terms that have the same variable raised to the same power.

**line graph** (p. 42) A graph that uses line segments to connect data points. It is especially useful for showing changes in data over time.

**linear combination** (p. 411) An equation obtained by adding one of two equations (or a multiple of one of the equations) to the other equation in a linear system.

**linear equation in one variable** (p. 133) An equation in which the variable is raised to the first power and does not occur in a denominator, inside a square root symbol, or inside an absolute value symbol.

**linear extrapolation** (p. 318) A method of estimating the coordinates of a point that lies to the right or left of all of the given data points.

**linear inequality in $x$ and $y$** (p. 360) An inequality that can be written as follows:

$$ax + by < c \qquad ax + by \leq c$$
$$ax + by > c \qquad ax + by \geq c$$

**linear interpolation** (p. 318) A method of estimating the coordinates of a point that lies between two given data points.

**linear model** (p. 274) A linear function that is used to model a real-life situation. In the linear model $y = mx + b$, $m$ is the rate of change and $b$ is the initial amount.

## M

**mathematical model** (p. 33) An expression, equation, or inequality that represents a real-life situation.

**matrix** (p. 86) A rectangular arrangement of numbers into horizontal rows and vertical columns. The plural of *matrix* is *matrices*.

column

$$\text{row} \longrightarrow \begin{bmatrix} 3 & 1 & 0 & 8 \\ -1 & 2 & 4 & -2 \\ 5 & -7 & 3 & 6 \end{bmatrix}$$
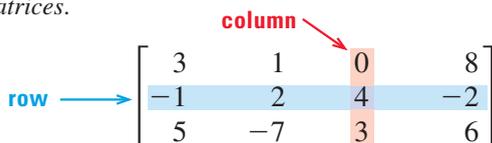
**mean or average** (p. 369) The sum of $n$ numbers divided by $n$.

**means of a proportion** (p. 643) In the proportion $\frac{a}{b} = \frac{c}{d}$, $b$ and $c$ are the means.

**measure of central tendency** (p. 369) A number that is used to represent a typical number in a data set. *See also* mean, median, *and* mode.

**median** (p. 369) The middle number of a collection of $n$ numbers when the numbers are written in numerical order. If $n$ is even, the median is taken to be the average of the two middle numbers.

**midpoint between two points** (p. 747) The midpoint of the line segment connecting them.

**midpoint formula** (p. 747) The midpoint between $(x_1, y_1)$ and $(x_2, y_2)$ is $\left( \dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2} \right)$.

**mode** (p. 369) The number that occurs most frequently in a collection of $n$ numbers. A set of data can have more than one mode or no mode.

**modeling** (p. 33) Writing algebraic expressions, equations, or inequalities that represent real-life situations.

**monomial** (p. 576) A polynomial with only one term.

## N

**negative numbers** (p. 63) Any of the numbers less than zero. *See also* real number line.

**negative square root** (p. 503) One of two square roots of a positive real number.

## O

**odds** (p. 116) The ratio of the number of ways an event can occur to the number of ways the event cannot occur.

**open sentence** (p. 24) An equation that contains one or more variables.

**opposites** (p. 65) Two points on a number line that are the same distance from the origin but are on opposite sides of it.

**order of operations** (p. 16) The rules established to evaluate an expression involving more than one operation.

**ordered pair** (p. 203) A pair of numbers used to identify a point in a plane. *See also* coordinate plane.

**origin of a coordinate plane** (p. 203) The point $(0, 0)$ in a coordinate plane at which the horizontal axis intersects the vertical axis. *See also* coordinate plane.
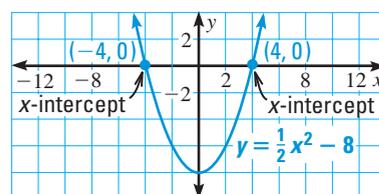
**origin of a number line** (p. 63) The point labeled zero on a number line.

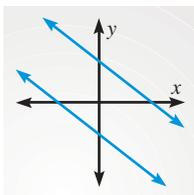**outcomes** (p. 114) The different possible results of a probability experiment.

**output** (p. 46) *See* function.

## P

**parabola** (p. 518) The U-shaped graph of a quadratic function.

**parallel lines** (p. 242) Two different lines in the same plane that do not intersect.



**percent of decrease** (p. 484) The expression $100r$ is the percent of decrease where $r$ is the decay rate in the exponential decay model.

**percent of increase** (p. 477) The expression $100r$ is the percent of increase where $r$ is the growth rate in the exponential growth model.

**perfect square** (p. 504) A number whose square roots are integers or quotients of integers.

**perpendicular lines** (p. 246) Two nonvertical lines in the same plane such that the slope of one line is the negative reciprocal of the slope of the other.

A vertical line and a horizontal line in the same plane are also perpendicular.
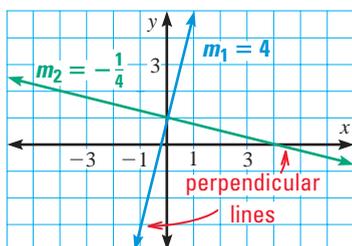


**plotting a point** (pp. 63, 203) Drawing the point on a number line that corresponds to a number. Drawing the point in a coordinate plane that corresponds to an ordered pair of numbers.
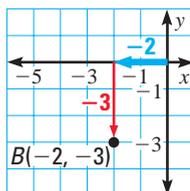


**point-slope form** (p. 300) The equation of a nonvertical line $y - y_1 = m(x - x_1)$ that passes through a given point $(x_1, y_1)$ with a slope of $m$.

**polynomial** (p. 576) An expression which is the sum of terms of the form $ax^k$ where $k$ is a nonnegative integer.

**positive numbers** (p. 63) Any of the numbers greater than zero. *See also* real number line.

**positive square root, or principal square root** (p. 503) One of two square roots of a positive real number.

**postulates** (p. 758) The basic properties of mathematics that mathematicians accept without proof.

**power** (p. 9) The result of repeated multiplication. For example, in the expression $4^2 = 16$, 16 is the second power of 4.

**prime factor** (p. 625) A factor that is not the product of polynomials having integer coefficients.

**probability of an event** (p. 114) A measure of the likelihood that the event will occur due to chance. It is a number between 0 and 1, inclusive.

**properties of equality** (p. 139) The rules of algebra used to transform equations into equivalent equations.

**proportion** (p. 643) An equation that states that two ratios are equal. For example, $\frac{a}{b} = \frac{c}{d}$, where $a$, $b$, $c$, and $d$ are nonzero real numbers.

**Pythagorean theorem** (p. 738) If a triangle is a right triangle, then the sum of the squares of the lengths of the legs $a$ and $b$ equals the square of the length of the hypotenuse $c$.

$$a^2 + b^2 = c^2$$
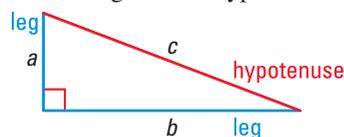


**Q**

**quadrant** (p. 203) One of four parts into which the axes divide a coordinate plane. *See also* coordinate plane.

**quadratic equation in standard form** (p. 505) An equation written in the form $ax^2 + bx + c = 0$, where $a \neq 0$.

**quadratic formula** (p. 533) The formula used to find the solutions of the quadratic equation $ax^2 + bx + c = 0$, when $a \neq 0$ and $b^2 - 4ac \geq 0$.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

**quadratic function in standard form** (p. 518) A function written in the form $y = ax^2 + bx + c$, where $a \neq 0$.

**quadratic inequality** (p. 548) An inequality that can be written as follows:

$$y < ax^2 + bx + c \qquad y \leq ax^2 + bx + c$$
$$y > ax^2 + bx + c \qquad y \geq ax^2 + bx + c$$

**quadratic model** (p. 554) A function used to model a collection of data or a real-life situation.

Quadratic model: $y = ax^2 + bx + c$

**quartiles** (p. 375) Three numbers that separate a set of data into four parts.

- The *first quartile* is the median of the lower half of the data.
- The *second quartile* (or median) separates the data into two halves: the numbers that are below the median and the numbers that are above the median.
- The *third quartile* is the median of the upper half of the data.

**R**

**radicand** (p. 503) The number or expression inside a radical symbol.

**range of a function** (p. 47) The collection of all output values.

**rate of *a* per *b*** (p. 180) The relationship $\frac{a}{b}$ of two quantities $a$ and $b$ that are measured in different units.

**rate of change** (p. 229) A comparison of two different quantities that are changing. Slope provides an important way of visualizing a rate of change.

**ratio of *a* to *b*** (p. 140) The relationship $\frac{a}{b}$ of two quantities *a* and *b* that are measured in the same unit.

**rational equation** (p. 690) An equation that contains rational expressions.

**rational expression** (p. 664) A fraction whose numerator, denominator, or both numerator and denominator are nonzero polynomials.

**rational function** (p. 692) A function of the form $f(x) = \frac{\text{polynomial}}{\text{polynomial}}$.

**rational number** (p. 664) A number that can be written as the quotient of two integers.

**real number line** (p. 63) A line that pictures real numbers as points.


Negative numbers    Positive numbers
−4  −3  −2  −1  0  1  2  3  4
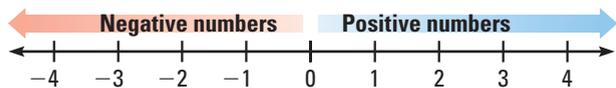
**real numbers** (p. 63) The set of numbers consisting of the positive numbers, the negative numbers, and zero. *See also* real number line.

**reciprocal** (p. 108) If $\frac{a}{b}$ is a nonzero number, then its reciprocal is $\frac{b}{a}$. The product of a number and its reciprocal is 1.

**relation** (p. 256) Any set of ordered pairs $(x, y)$.

**roots of a quadratic equation** (p. 526) The solutions of $ax^2 + bx + c = 0$.

**round-off error** (p. 166) The error produced when a decimal result is rounded in order to provide a meaningful answer.

**S**

**scalar multiplication** (p. 97) Multiplication of a matrix by a real number.

**scatter plot** (p. 204) A graph of pairs of numbers that represent real-life situations. It is a way to analyze the relationship between two quantities.

**scientific notation** (p. 470) A number expressed in the form $c \times 10^n$, where $1 \le c < 10$ and *n* is an integer.

**similar triangles** (p. 140) Two triangles are similar if they have equal corresponding angles. It can be shown that this is equivalent to the ratios of the lengths of the corresponding sides being equal.


Sides $\overline{AB}$ and $\overline{DE}$ correspond.
Sides $\overline{AC}$ and $\overline{DF}$ correspond.
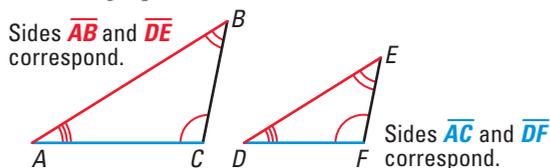
**simplest form of a radical expression** (p. 512) An expression that has no perfect square factors other than 1 in the radicand, no fractions in the radicand, and no radicals appearing in the denominator of a fraction.

**simplified expression** (p. 102) An expression is simplified if it has no symbols of grouping and if all the like terms have been combined.

**simplified rational expression** (p. 664) A rational expression is simplified if its numerator and denominator have no factors in common (other than $\pm 1$).
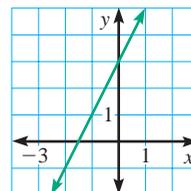
**sine** (p. 752) *See* trigonometric ratio.

**slope** (p. 226) The number of units a nonvertical line rises or falls for each unit of horizontal change from left to right. The slope *m* is $m = \frac{y_2 - y_1}{x_2 - x_1}$.
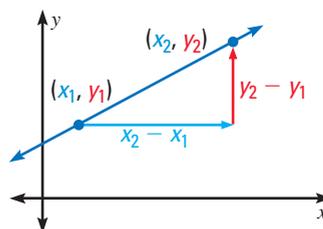


**slope-intercept form** (pp. 241, 273) A linear equation written in the form $y = mx + b$. The slope of the line is *m*. The *y*-intercept is *b*. *See also* slope *and* *y*-intercept.

$y = 2x + 3$
Slope is 2.
*y*-intercept is 3.



**solution of an equation** (p. 24) A number that, when substituted for the variable in an equation, results in a true statement.

**solution of an inequality** (p. 26) A number that, when substituted for the variable in an inequality, results in a true statement.

**solution of a linear equation** (p. 210) An ordered pair $(x, y)$ is a solution of a linear equation if the equation is true when the values of *x* and *y* are substituted into the equation.

**solution of a linear inequality** (p. 360) An ordered pair $(x, y)$ is a solution of a linear inequality if the inequality is true when the values of *x* and *y* are substituted into the inequality.

**solution step** (p. 133) The result of applying a transformation to an equation when solving the equation.

**solution of a system of linear equations in two variables** (p. 398) An ordered pair $(x, y)$ that satisfies each equation in the system.

**solution of a system of linear inequalities** (p. 432) An ordered pair $(x, y)$ that is a solution of each inequality in the system.

**solving an equation** (p. 25) Finding all the solutions of an equation.

**solving a right triangle** (p. 753) Finding the lengths of the other two sides of a right triangle, given the measure of one acute angle and the length of one side of the right triangle.

**square root** (p. 503) If $b^2 = a$, then $b$ is a square root of $a$. Square roots are written with a radical symbol $\sqrt{\phantom{x}}$.

**square root function** (p. 709) The function defined by $y = \sqrt{x}$.

**standard form of an equation of a line** (p. 308) A linear equation of the form $Ax + By = C$ where $A$, $B$, and $C$ are real numbers and $A$ and $B$ are not both zero.

**standard form of a polynomial** (p. 576) A polynomial whose terms are placed in descending order, from largest degree to smallest degree.

**stem-and-leaf plot** (p. 368) An arrangement of digits that is used to display and order numerical data.

**system of linear equations** (p. 398) Two or more linear equations in the same variables. This is also called a linear system.

**system of linear inequalities** (p. 432) Two or more linear inequalities in the same variables. This is also called a system of inequalities.

# T

**tangent** (p. 752) *See* trigonometric ratio.

**terms of an expression** (p. 80) The parts that are added in an expression. For example, in the expression $5 - x$, the terms are 5 and $-x$.

**theorem** (pp. 738, 759) A statement that can be proven to be true.

**theoretical probability** (p. 114) A type of probability that is based on the number of favorable outcomes divided by the total number of outcomes.

**time period** (p. 477) The variable $t$ in the exponential growth and decay models. *See also* exponential growth *and* exponential decay.
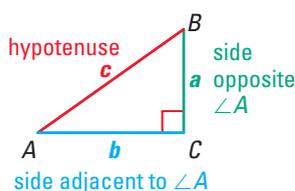
**transform an equation** (p. 132) To change an equation into an equivalent equation.

**trigonometric ratio** (p. 752) The ratio of the lengths of two sides of a right triangle. For example:

$$\sin A = \frac{\text{side opposite } \angle A}{\text{hypotenuse}}$$

$$\cos A = \frac{\text{side adjacent to } \angle A}{\text{hypotenuse}}$$

$$\tan A = \frac{\text{side opposite } \angle A}{\text{side adjacent to } \angle A}$$



**trinomial** (p. 576) A polynomial with three terms.

# U

**unit analysis** (p. 5) Writing the units of each variable in a real-life problem to help determine the units for the answer.

**unit rate** (p. 180) A rate per one given unit.

# V

**values** (p. 3) The numbers represented by variables.

**variable** (p. 3) A letter that is used to represent one or more numbers.

**variable expression** (p. 3) A collection of numbers, variables, and operations.

**velocity** (p. 66) The speed and direction in which an object is traveling (up is positive and down is negative). The speed of an object is the absolute value of its velocity.

**verbal model** (p. 5) An expression that uses words to represent a real-life situation.

**vertex of a parabola** (p. 518) The lowest point of a parabola that opens up or the highest point of a parabola that opens down. *See also* parabola.

**vertical motion models** (p. 535) A model for the height of a falling object that is dropped and the model for an object thrown down or up.

# X

**x-axis** (p. 203) The horizontal axis in a coordinate plane. *See also* coordinate plane.

**x-coordinate** (p. 203) The first number in an ordered pair. *See also* ordered pair *and* plotting a point.

**x-intercept** (p. 218) The $x$-coordinate of a point where a graph crosses the $x$-axis.

# Y

**y-axis** (p. 203) The vertical axis in a coordinate plane. *See also* coordinate plane.

**y-coordinate** (p. 203) The second number in an ordered pair. *See also* ordered pair *and* plotting a point.

**y-intercept** (p. 218) The $y$-coordinate of a point where a graph crosses the $y$-axis.

# Z

**zero-product property** (p. 597) If $a$ and $b$ are real numbers and $ab = 0$, then $a = 0$ or $b = 0$.