

Glossary

A

acute angle An angle that measures less than 90° .

acute triangle A triangle in which all three angles are acute angles.

Addition Property of Equality The same number can be added to both sides of an equation and the sides remain equal.

algebraic expression A mathematical phrase involving a variable or variables, numbers, and operations.

Example: $x - 3$

angle Two rays that have the same endpoint.



area The number of square units needed to cover a surface or figure.

array An arrangement of objects in rows and columns so that each row has the same number of objects and each column has the same number of objects.

Associative Property of Addition

The grouping of addends can be changed and the sum remains the same.

Example: $1 + (3 + 5) = (1 + 3) + 5$

Associative Property of Multiplication

The grouping of factors can be changed and the product remains the same.

Example: $2 \times (4 \times 10) = (2 \times 4) \times 10$

average The number found by adding all the data and dividing by the number of data. Also, called the *mean*.

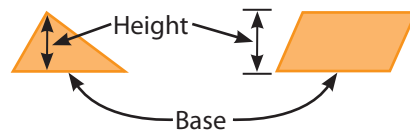
axis (plural: axes) Either of two lines drawn perpendicular to each other in a graph.

B

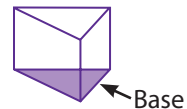
bar graph A graph that uses bars (rectangles) to show and compare data that tells how many or how much.

base (in arithmetic) The number that is multiplied by itself when raised to a power. *Example:* In 5^3 , 5 is the base.

base of a polygon The side of a polygon to which the height is perpendicular.



base of a solid The face of a solid that is used to name the solid.



benchmark fractions Fractions such as $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$ and $\frac{3}{4}$ used for estimates of actual fractional amounts.

C

capacity The volume of a container measured in liquid units.

center The point from which all points in a circle are equally distant.

centimeter (cm) A metric unit of length. 100 centimeters equal 1 meter.

certain (event) An event that will always happen.

circle graph A graph in the shape of a circle that shows how all (100%) of a set of data has been divided into parts.

common denominator A number that is the denominator of two or more fractions.

common factor A number that is a factor of two or more given numbers.
Example: 1, 2, and 4 are common factors of 4 and 8.

common multiple A number that is a multiple of two or more numbers.

Commutative Property of Addition

The order of addends can be changed and the sum remains the same.

Example: $3 + 7 = 7 + 3$

Commutative Property of Multiplication

The order of factors can be changed and the product remains the same.

Example: $3 \times 5 = 5 \times 3$

compatible numbers Numbers that are easy to compute with mentally.

compensation Adjusting one number of an operation to make computations easier and balancing the adjustment by changing the other number.

composite number A whole number greater than one that has more than two factors.

cone A solid figure with one circular base; the points on the circle are joined to one point outside the base.



congruent figures Figures that have the same size and shape.

construction The drawing or copying of a figure using only a compass and a straightedge.

coordinate grid A grid that makes it easy to locate points in a plane using an ordered pair of numbers.

coordinate plane A coordinate grid that extends to include both positive and negative numbers.

coordinates The two numbers in an ordered pair.

cube A solid figure with six flat surfaces called faces. All the faces are squares.

cubed A name for a number to the third power.

cubic unit The volume of a cube 1 unit on each edge.

cup (c) A customary unit of capacity. 1 cup equals 8 fluid ounces.

cylinder A solid figure with two circular bases that are congruent and parallel.

D

data Collected information.

degree (°) A unit of measure for angles and temperature.

degree Celsius (°C) A unit of measure for measuring temperature in the metric system.

degree Fahrenheit (°F) A unit of measure for measuring temperature in the customary system.

denominator The number below the fraction bar in a fraction.

diameter Any line segment through the center of a circle and that connects two points on the circle.

difference The number that results from subtracting one number from another.

digits The symbols used to write numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Distributive Property Multiplying a sum (or difference) by a number is the same as multiplying each number in the sum (or difference) by that number and adding (or subtracting) the products.

Examples: $3 \times (10 + 4) = (3 \times 10) + (3 \times 4)$
 $3 \times (10 - 4) = (3 \times 10) - (3 \times 4)$

dividend The number to be divided.

divisibility rules Rules that are used to find if a number is divisible by numbers such as 2, 3, 4, 5, 6, 9, or 10.

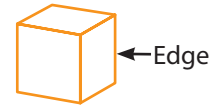
divisible A whole number is divisible by another number when the quotient is a whole number and the remainder is zero.

Division Property of Equality Both sides of an equation can be divided by the same nonzero number and the sides remain equal.

divisor The number used to divide another number.

E

edge A line segment where two faces meet in a solid figure.



elapsed time The difference between two times.

equally likely (outcomes) Having the same chance of occurring.

equal ratios Ratios that show the same comparison.

equation A number sentence that uses an equal sign to show that two expressions have the same value.

Examples: $9 + 3 = 12$, $x - 5 = 10$

equilateral triangle A triangle in which all three sides are the same length.

equivalent decimals Decimals which name the same amount.

Example: $0.7 = 0.70$

equivalent fractions Fractions that name the same part of a whole region, length, or set.

Example: $\frac{1}{3} = \frac{2}{6}$

estimate To give an approximate value rather than an exact answer.

event A collection of one or more outcomes.

expanded form A way to write a number that shows the place value of each digit.

Example: 3,562 can be written as
 $3,000 + 500 + 60 + 2$

expanded form (numbers with exponents) A way of writing a number involving exponents that shows the base as a factor.

exponent A number that tells how many times the base is used as a factor.

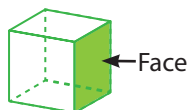
Example: $10^3 = 10 \times 10 \times 10$

The exponent is 3 and the base is 10.

exponential form A way to write a number using a base and an exponent.



face A flat surface of a polyhedron.



factor pair A pair of whole numbers whose product equals a given whole number.

factors Numbers that are multiplied to get a product.

factor tree A diagram that shows the prime factorization of a composite number.

fluid ounce (fl oz) A customary unit of capacity equal to 2 tablespoons.

formula A rule that is stated with symbols.

fraction A symbol, such as $\frac{2}{3}$, $\frac{5}{1}$, or $\frac{8}{5}$, used to name a part of a whole that is divided into equal parts. A fraction can name a part of a region, a part of a set, a location on a number line, or a division of whole numbers.

frequency table A table used to show the number of times something occurs.

front-end estimation A method of estimating by changing numbers to the place-value of their front digit and then finding the sum or difference.



gallon (gal) A unit for measuring capacity in the customary system. 1 gallon equals 4 quarts.

generalization A general statement.
Example: A generalization about rectangles applies to all rectangles.

gram (g) A metric unit of mass equal to 1,000 milligrams.

greatest common factor (GCF) The greatest number that is a factor of two or more given numbers.

Example: The GCF of 6 and 15 is 3.



height The length of a segment from one vertex of a polygon perpendicular to the base.

hexagon A polygon with six sides.

histogram A bar graph that groups data into equal intervals shown on a horizontal axis. There is no space between the bars.

hundredth One part of 100 equal parts of a whole.

I

Identity Properties The properties that state the sum of any number and 0 is that number, and the product of any number and 1 is that number.

impossible (event) An event that can never happen.

improper fraction A fraction whose numerator is greater than or equal to its denominator.

input/output table A table of values which shows one output value for each input value.

integers The whole numbers and their opposites; 0 is its own opposite.

intersecting lines Lines that pass through the same point.

interval (on a graph) The difference between adjoining numbers on an axis of a graph.

inverse operations Operations that undo each other.

isosceles triangle A triangle with two sides of the same length.

K

kilogram (kg) A metric unit of mass equal to 1,000 grams.

kilometer (km) A metric unit of length equal to 1,000 meters.

L

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

least common multiple (LCM) The least number, other than zero, that is a multiple of each of two or more numbers.

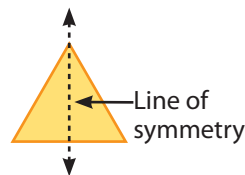
line A straight path of points that goes on forever in two directions.



linear equation An equation whose graph is a straight line.

line graph A graph that connects points to show how data changes over time.

line of symmetry The fold line in a symmetric figure.



line plot A display of responses along a number line with x's recorded above the response to indicate the number of times the response occurred.

line segment Part of a line having two endpoints.



liter (L) A metric unit of capacity equal to 1,000 milliliters.

M

mass The measure of the quantity of matter in an object.

mean The number found by adding all the data and dividing by the number of data. Often called the average.

median The middle data value in an ordered set of data.

meter (m) The basic unit of length in the metric system.

milligram (mg) A metric unit of mass. 1,000 milligrams equal 1 gram.

milliliter (mL) A metric unit of capacity equal to 0.001 liter.

millimeter (mm) A metric unit of length. 1,000 millimeters equal 1 meter.

mixed number A number written with a whole number and a fraction.

Example: $2\frac{3}{4}$

mode The data value that occurs most often in a set of data.

multiple The product of a given whole number and any other whole number.

multiple of 10 A number that has 10 as a factor.

Multiplication Property of Equality Both sides of an equation can be multiplied by the same nonzero number and the sides remain equal.

multiplicative inverse Another name for reciprocal.



net A plane figure which, when folded, gives a solid figure.

numerator The number above the fraction bar in a fraction.



obtuse angle An angle that measures between 90° and 180° .

obtuse triangle A triangle in which one angle is an obtuse angle.

octagon A polygon with eight sides.

order of operations The order in which operations are done in calculations. Operations inside parentheses are done first. Then exponents are calculated. Then multiplication and division are done in order from left to right, and finally addition and subtraction are done in order from left to right.

ordered pair A pair of numbers used to locate a point on a coordinate grid.

origin The point at which the x-axis and y-axis of the coordinate plane intersect. The origin is represented by the ordered pair (0, 0).

ounce (oz) A customary unit of weight. 16 ounces equal 1 pound.

outcome A result in an experiment.

overestimate The result of using numbers greater than the actual numbers to estimate a sum or product. The estimate is greater than the actual answer.

P

parallel lines In a plane, lines that never cross and stay the same distance apart.

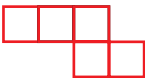
parallelogram A quadrilateral with both pairs of opposite sides parallel and equal in length.



partial products Products found by breaking one of two factors into ones, tens, hundreds, and so on, and then multiplying each of these by the other factor.

pentagon A polygon with five sides.

pentomino An arrangement of 5 identical squares in a plane. The squares must be attached to one another edge to edge.

Example: 

percent A ratio in which the first term is compared to 100.

perimeter The distance around the outside of any polygon.

period A group of 3 digits in a number. Periods are separated by a comma and start from the right of a number.

perpendicular lines Two lines that intersect to form right angles.

picture graph A graph that uses pictures or symbols to represent data. Each picture represents a certain amount in the data.

pint (pt) A customary unit of capacity equal to 2 cups.

place value The position of a digit in a number that is used to determine the value of the digit.

Example: In 5,318, the 3 is in the hundreds place. So, the 3 has a value of 300.

plane An endless flat surface.

point An exact location in space.

polygon A closed plane figure made up of line segments.



positive integers Integers greater than zero.

pound (lb) A customary unit of weight equal to 16 ounces.

prime factorization Writing a number as a product of all of its prime factors.

prime number A whole number greater than 1 that has exactly two factors, itself and 1.

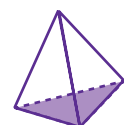
prism A solid figure with two congruent parallel bases and faces that are parallelograms.

probability (of an event) The ratio of the number of favorable outcomes to the total number of possible outcomes. The ratio describes the chance that the event will occur.

product The number that is the result of multiplying two or more factors.

protractor An instrument used to measure and draw angles.

pyramid A solid figure with a base that is a polygon and whose faces are triangles with a common vertex.





quadrilateral A polygon with four sides.

quart (qt) A customary unit of capacity equal to 2 pints.

quotient The answer to a division problem.



range The difference between the greatest value and the least value in a data set.

ratio A relationship where for every x units of one quantity there are y units of another quantity.

ray Part of a line that has one endpoint and extends forever in only one direction.



reciprocal A given number is a reciprocal of another number if the product of the numbers is one.

Example: The numbers $\frac{1}{8}$ and $\frac{8}{1}$ are reciprocals because $\frac{1}{8} \times \frac{8}{1} = 1$.

rectangle A parallelogram with four right angles.

regular polygon A polygon that has sides of equal length and angles of equal measure.

remainder The number less than the divisor that remains after the division is complete.

rhombus A parallelogram with all sides the same length.

right angle An angle that measures 90° .

right triangle A triangle in which one angle is a right angle.

rounding A process of replacing a number with the nearest multiple of 10, 100, 1,000, and so on.



sample A representative part of a larger group.

sample space The set of all possible outcomes.

scale (in a bar graph) A series of numbers at equal distances along an axis on a graph.

scalene triangle A triangle in which no sides have the same length.

sides (of an angle) The two rays that form an angle.

similar figures Figures that have the same shape. They may or may not have the same size.



Similar hexagons

simplest form A fraction in which the greatest common factor of the numerator and denominator is one.

solid figure (also: solid) A figure that has three dimensions and volume.

solution The value of a variable that makes an equation true.

sphere A solid figure with all points the same distance from the center point.

square A rectangle with all sides the same length.

squared A name for a number to the second power.

standard form The most common way of writing numbers. It uses digits and place value.

Example: 3,458

standard form (numbers with exponents) The common way of writing numbers without any exponents or operations.

straight angle An angle that measures 180° .

Subtraction Property of Equality The same number can be subtracted from both sides of an equation and the sides remain equal.

sum The number that is the result of adding two or more addends.

surface area (SA) The sum of the areas of all faces of a polyhedron.

survey A question or questions used to gather information.

symmetric figure A figure that can be folded into two congruent parts that fit on top of each other.

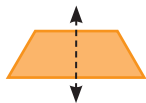


table of values A table used to show how one quantity is related to another.

tablespoon (tbsp) A customary unit of capacity equal to 3 teaspoons.

teaspoon (tsp) A customary unit of capacity equal to $\frac{1}{3}$ tablespoon.

tenth One out of ten equal parts of a whole.

thousandth One out of 1,000 equal parts of a whole.

ton (T) A customary unit of weight equal to 2,000 pounds.

trapezoid A quadrilateral that has exactly one pair of parallel sides.



tree diagram A diagram used to organize outcomes of an experiment.

trend The general direction in a data set.

triangle A polygon with three sides.



underestimate The result of using numbers less than the actual numbers to estimate a sum or product. The estimate is less than the actual answer.



value (of a digit) The number a digit represents, which is determined by the position of the digit. See also *place value*.

variable A letter, such as n , or a symbol that represents an unknown amount that can vary, or change in an expression or an equation.

vertex (plural: vertices) **a.** The common endpoint of the two rays in an angle. **b.** The point at which three or more edges meet in a solid figure. **c.** The point of a cone.

volume The number of cubic units needed to fill a solid figure.



weight A measure of how light or how heavy something is.

whole numbers The numbers 0, 1, 2, 3, 4, and so on.

word form A way of expressing numbers by using words.



x-axis A horizontal line that includes both positive and negative numbers. It is used to locate points in a coordinate plane.

x-coordinate The first number in an ordered pair. It names the distance to the right or left from the origin along the x-axis.



y-axis A vertical line that includes both positive and negative numbers. It is used to locate points in a coordinate plane.

y-coordinate The second number in an ordered pair. It names the distance up or down from the origin along the y-axis.



Zero Property of Multiplication The product of any number and 0 is 0.

Example: $8 \times 0 = 0$

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