

Glossary

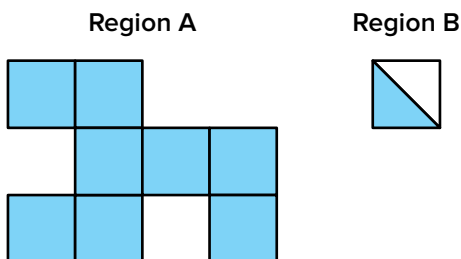
A

absolute value The absolute value of a number is its distance from 0 on the number line.

adjacent angles Adjacent angles share a side and a vertex.

area Area is the number of square units that cover a two-dimensional region, without any gaps or overlaps.

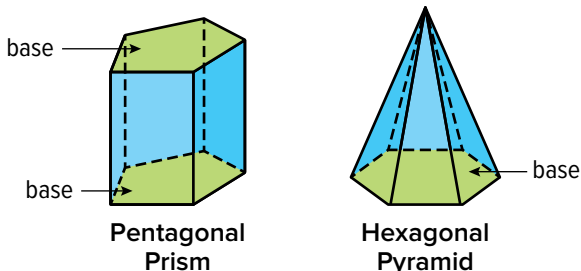
For example, the area of region A is 8 square units. The area of the shaded region of B is $\frac{1}{2}$ square unit.



area of a circle If the radius of a circle is r units, then the area of the circle is πr^2 square units.

B

base (of a prism or pyramid) The word *base* can also refer to a face of a polyhedron. A prism has two identical bases that are parallel. A pyramid has one base. A prism or pyramid is named for the shape of its base.



C

chance experiment A chance experiment is something you can do over and over again, and you don't know what will happen each time.

circle A circle is made out of all the points that are the same distance from a given point.

circumference The circumference of a circle is the distance around the circle. If you imagine the circle as a piece of string, it is the length of the string. If the circle has radius r then the circumference is $2\pi r$.

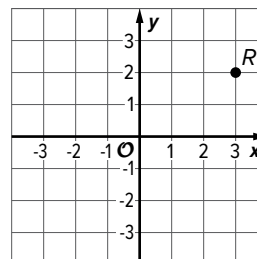
complementary Complementary angles have measures that add up to 90 degrees.

constant of proportionality In a proportional relationship, the values for one quantity are each multiplied by the same number to get the values for the other quantity. This number is called the constant of proportionality.

In this example, the constant of proportionality is 3, because $2 \cdot 3 = 6$, $3 \cdot 3 = 9$, and $5 \cdot 3 = 15$. This means that there are 3 apples for every 1 orange in the fruit salad.

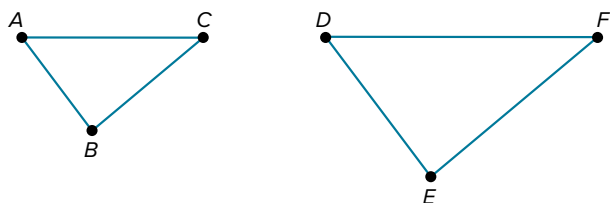
Number of Oranges	Number of Apples
2	6
3	9
5	15

coordinate plane The coordinate plane is a system for telling where points are. For example, point R is located at $(3, 2)$ on the coordinate plane, because it is three units to the right and two units up.



corresponding When part of an original figure matches up with part of a copy, we call them corresponding parts. These could be points, segments, angles, or distances.

For example, point B in the first triangle corresponds to point E in the second triangle. Segment AC corresponds to segment DF .



cross section A cross section is the new face you see when you slice through a three-dimensional figure.

D

deposit When you put money into an account, it is called a *deposit*.

diameter A diameter is a line segment that goes from one edge of a circle to the other and passes through the center. A diameter can go in any direction. Every diameter of the circle is the same length. We also use the word *diameter* to mean the length of this segment.

E

equivalent expressions Equivalent expressions are always equal to each other. If the expressions have variables, they are equal whenever the same value is used for the variable in each expression.

equivalent ratios Two ratios are equivalent if you can multiply each of the numbers in the first ratio by the same factor to get the numbers in the second ratio. For example, $8 : 6$ is equivalent to $4 : 3$, because $8 \cdot \frac{1}{2} = 4$ and $6 \cdot \frac{1}{2} = 3$.

event An event is a set of one or more outcomes in a chance experiment. For example, if we roll a number cube, there are six possible outcomes.



expand To expand an expression, we use the distributive property to rewrite a product as a sum. The new expression is equivalent to the original expression.

For example, we can expand the expression $5(4x + 7)$ to get the equivalent expression $20x + 35$.

F

factor (an expression) To factor an expression, we use the distributive property to rewrite a sum as a product. The new expression is equivalent to the original expression.

For example, we can factor the expression $20x + 35$ to get the equivalent expression $5(4x + 7)$.

I

interquartile range (IQR) The interquartile range is one way to measure how spread out a data set is. We sometimes call this the IQR. To find the interquartile range we subtract the first quartile from the third quartile.

L

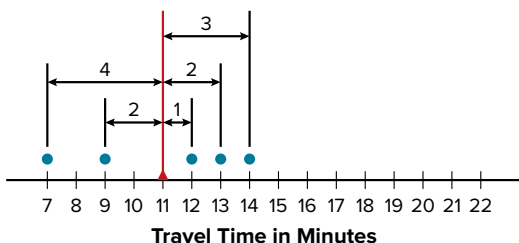
long division Long division is a way to show the steps for dividing numbers in decimal form. It finds the quotient one digit at a time, from left to right.

For example, here is the long division for $57 \div 4$.

$$\begin{array}{r} 14.25 \\ 4 \overline{)57.00} \\ \underline{-4} \\ 17 \\ \underline{-16} \\ 10 \\ \underline{-8} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

M

mean The mean is one way to measure the center of a data set. We can think of it as a balance point. For example, for the data set 7, 9, 12, 13, 14, the mean is 11.



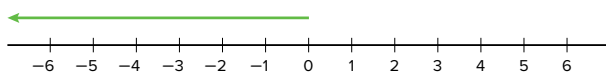
mean absolute deviation (MAD) The mean absolute deviation is one way to measure how spread out a data set is. Sometimes we call this the MAD. For example, for the data set 7, 9, 12, 13, 14, the MAD is 2.4. This tells us that these travel times are typically 2.4 minutes away from the mean, which is 11.

measurement error Measurement error is the positive difference between a measured amount and the actual amount.

median The median is one way to measure the center of a data set. It is the middle number when the data set is listed in order.

N

negative number A negative number is a number that is less than zero. On a horizontal number line, negative numbers are usually shown to the left of 0.



O

origin The origin is the point (0, 0) in the coordinate plane. This is where the horizontal axis and the vertical axis cross.

outcome An outcome of a chance experiment is one of the things that can happen when you do the experiment. For example, the possible outcomes of tossing a coin are heads and tails.

P

percent decrease A percentage decrease tells how much a quantity went down, expressed as a percentage of the starting amount.

percent error Percent error is a way to describe error, expressed as a percentage of the actual amount.

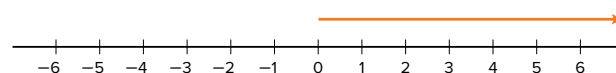
percent increase A percentage increase tells how much a quantity went up, expressed as a percentage of the starting amount.

percentage A percentage is a rate per 100.

pi (π) There is a proportional relationship between the diameter and circumference of any circle. The constant of proportionality is pi. The symbol for pi is π .

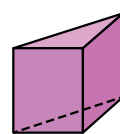
population A population is a set of people or things that we want to study.

positive number A positive number is a number that is greater than zero. On a horizontal number line, positive numbers are usually shown to the right of 0.

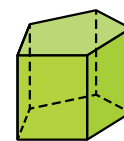


prism A prism is a type of polyhedron that has two bases that are identical copies of each other. The bases are connected by rectangles or parallelograms.

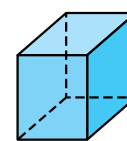
Here are some drawings of prisms.



Triangular Prism



Pentagonal Prism



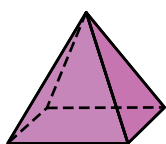
Rectangular Prism

probability The probability of an event is a number that tells how likely it is to happen. A probability of 1 means the event will always happen. A probability of 0 means the event will never happen.

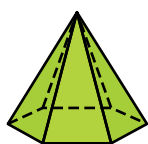
proportion A proportion of a data set is the fraction of the data in a given category.

pyramid A pyramid is a type of polyhedron that has one base. All the other faces are triangles, and they all meet at a single vertex.

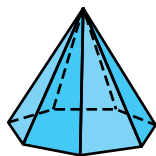
Here are some drawings of pyramids.



Rectangular
Pyramid



Hexagonal
Pyramid



Heptagonal
Pyramid

R

radius A radius is a line segment that goes from the center to the edge of a circle. A radius can go in any direction. Every radius of the circle is the same length. We also use the word *radius* to mean the length of this segment.

random Outcomes of a chance experiment are random if they are all equally likely to happen.

rational number A rational number is a fraction or the opposite of a fraction.

For example, 8 and -8 are rational numbers because they can be written as $\frac{8}{1}$ and $-\frac{8}{1}$. Also, 0.75 and -0.75 are rational numbers because they can be written as $\frac{75}{100}$ and $-\frac{75}{100}$.

reciprocal Dividing 1 by a number gives the reciprocal of that number. For example, the reciprocal of 12 is $\frac{1}{12}$, and the reciprocal of $\frac{2}{5}$ is $\frac{5}{2}$.

repeating decimal A repeating decimal has digits that keep going in the same pattern over and over. The repeating digits are marked with a line above them.

representative A sample is representative of a population if its distribution resembles the population's distribution in center, shape, and spread.

right angle A right angle is half of a straight angle. It measures 90 degrees.

S

sample A sample is part of a population. For example, a population could be all the seventh grade students at one school. One sample of that population is all the seventh grade students who are in band.

sample space The sample space is the list of every possible outcome for a chance experiment.

scale A scale tells how the measurements in a scale drawing represent the actual measurements of the object.

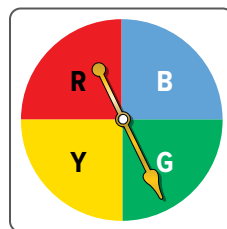
scale drawing A scale drawing represents an actual place or object. All the measurements in the drawing correspond to the measurements of the actual object by the same scale.

scale factor To create a scaled copy, we multiply all the lengths in the original figure by the same number. This number is called the scale factor.

scaled copy A scaled copy is a copy of a figure where every length in the original figure is multiplied by the same number.

simulation A simulation is an experiment that is used to estimate the probability of a real-world event.

For example, suppose the weather forecast says there is a 25% chance of rain. We can simulate this situation with a spinner with four equal sections. If the spinner stops on red, it represents rain. If the spinner stops on any other color, it represents no rain.



solution to an equation A solution to an equation is a number that can be used in place of the variable to make the equation true.

solution to an inequality A solution to an inequality is a number that can be used in place of the variable to make the inequality true.

squared We use the word *squared* to mean “to the second power.” This is because a square with side length s has an area of $s \cdot s$, or s^2 .

straight angle A straight angle is an angle that forms a straight line. It measures 180 degrees.

supplementary Supplementary angles have measures that add up to 180 degrees.

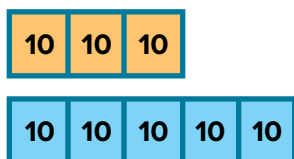
surface area The surface area of a polyhedron is the number of square units that covers all the faces of the polyhedron, without any gaps or overlaps.

For example, if the faces of a cube each have an area of 9 cm^2 , then the surface area of the cube is $6 \cdot 9$, or 54 cm^2 .

T

tape diagram A tape diagram is a group of rectangles put together to represent a relationship between quantities.

For example, this tape diagram shows a ratio of 30 gallons of yellow paint to 50 gallons of blue paint.



If each rectangle were labeled 5, instead of 10, then the same picture could represent the equivalent ratio of 15 gallons of yellow paint to 25 gallons of blue paint.

term A term is a part of an expression. It can be a single number, a variable, or a number and a variable that are multiplied together. For example, the expression $5x + 18$ has two terms. The first term is $5x$ and the second term is 18.

U

unit rate A unit rate is a rate per 1.

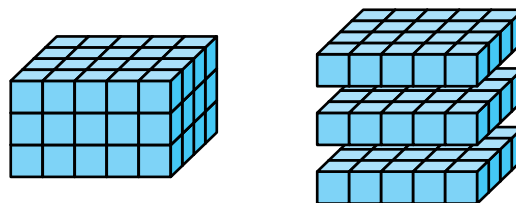
V

variable A variable is a letter that represents a number. You can choose different numbers for the value of the variable.

vertical angles Vertical angles are opposite angles that share the same vertex. They are formed by a pair of intersecting lines. Their angle measures are equal.

volume Volume is the number of cubic units that fill a three-dimensional region, without any gaps or overlaps.

For example, the volume of this rectangular prism is 60 units^3 , because it is composed of 3 layers that are each 20 units^3 .



W

withdrawal When you take money out of an account, it is called a *withdrawal*.