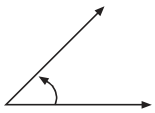
Vocabulary

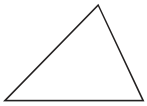
Vocabulary

Use the vocabulary words and definitions below as a reference for this unit.

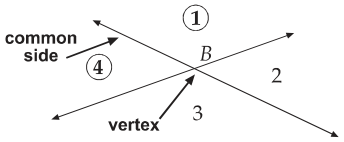
acute angle ..... an angle with a measure of less than 90°



acute triangle ..... a triangle with three acute angles

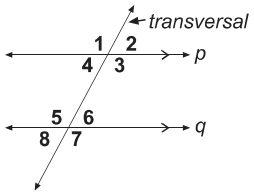


adjacent angles ..... two angles having a common vertex and sharing a common side

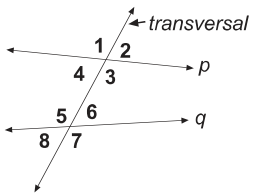


Angle 1 and angle 4 have a common side and also the same vertex. They are adjacent angles because they are next to each other.

alternate angles ..... a pair of angles that lie on opposite sides and at opposite ends of a transversal



Alternate angles are equal when the lines intersected by a transversal are parallel.



Even when lines cut by a transversal are *not* parallel, we still use the same vocabulary.

alternate exterior angles are angles whose points lie on the opposite sides of a transversal line and on the *outside* of the lines it intersects

∠1 and ∠7
∠2 and ∠8

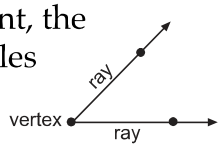
alternate interior angles are angles whose points lie on the opposite sides of a transversal line and on the *inside* of the lines it intersects

∠3 and ∠5
∠4 and ∠6

Vocabulary

altitude ..... see *height*

angle (∠) ..... the shape made by two rays extending from a common endpoint, the vertex; measures of angles are described in degrees (°)

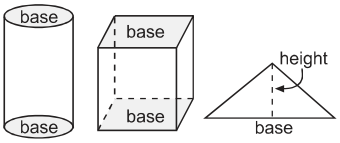


area (*A*) ..... the inside region of a two-dimensional figure measured in square units
Example: A rectangle with sides of four units by six units contains 24 square units or has an area of 24 square units.

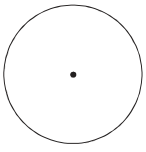
associative property ..... the way in which three or more numbers are grouped for addition or multiplication does *not* change their sum or product
Example: (5 + 6) + 9 = 5 + (6 + 9) *or*
(2 x 3) x 8 = 2 x (3 x 8)

axes (of a graph) ..... the horizontal and vertical number lines used in a rectangular graph or coordinate grid system as a fixed reference for determining the position of a point; (singular: *axis*)

base (*b*) ..... the line or plane upon which a figure is thought of as resting



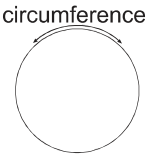
center (of a circle) ..... the point from which all points on the circle are the same distance



circle ..... the set of all points in a plane that are all the same distance from a given point called the center

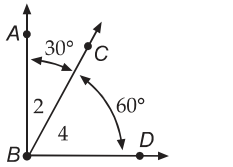
Vocabulary

circumference (*C*) ..... the perimeter of a circle; the distance around a circle



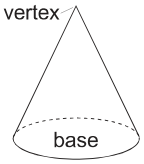
commutative property ..... the order in which any two numbers are added or multiplied does *not* change their sum or product
Example: 2 + 3 = 3 + 2 *or* 4 x 7 = 7 x 4

complementary angles ..... two angles, the sum of which is exactly 90°



m∠*ABC* + m∠*CBD* = 90°
complementary angles

cone ..... a three-dimensional figure with one circular base in which a curved surface connects the base to the vertex



congruent (≅) ..... figures or objects that are the same shape and the same size

coordinate grid or system ..... network of evenly spaced, parallel horizontal and vertical lines especially designed for locating points, displaying data, or drawing maps

coordinates ..... numbers that correspond to points on a graph in the form (x, y)

corresponding angles ..... a pair of angles that are in matching positions and lie on the same side of a transversal

corresponding angles and sides ..... the matching angles and sides in similar figures

Vocabulary

cross product ..... the product of one numerator and the opposite denominator in a pair of fractions
Example:

Is $\frac{2}{5}$ equal to $\frac{6}{15}$?

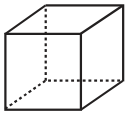
$\frac{2}{5} \stackrel{?}{=} \frac{6}{15}$

$2 \times 15 \stackrel{?}{=} 5 \times 6$ The cross products are 2×15 and 5×6

$30 = 30$ Both cross products equal 30. The cross products of equivalent fractions are equal.

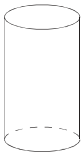
Yes, $\frac{2}{5} = \frac{6}{15}$.

cube ..... a rectangular prism that has six square faces



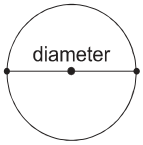
cubic units ..... units for measuring volume

cylinder ..... a three-dimensional figure with two parallel congruent circular bases
Example: a can



degree (°) ..... common unit used in measuring angles

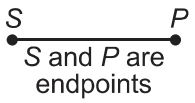
diameter (*d*) ..... a line segment from any point on the circle passing through the center to another point on the circle



distributive property ..... for any real numbers a, b, and x, $x(a + b) = ax + bx$

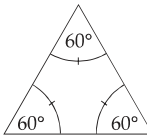
Vocabulary

endpoint ..... either of two points marking the end of a line segment

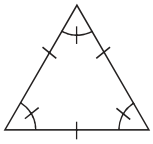


equation ..... a mathematical sentence that equates one expression to another expression
Example: $2x = 10$

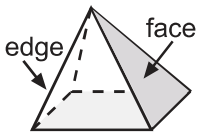
equiangular triangle ..... a triangle with three equal angles



equilateral triangle ..... a triangle with three congruent sides and three congruent angles



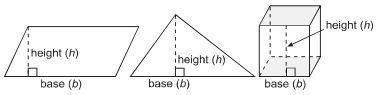
face ..... one of the plane surfaces bounding a three-dimensional figure



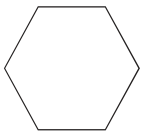
formula ..... a way of expressing a relationship using variables or symbols that represent numbers

graph of a point ..... the point assigned to an ordered pair on a coordinate plane

height (*h*) ..... a line segment extending from the vertex or *apex* (highest point) of a figure to its base and forming a right angle with the base or basal plane

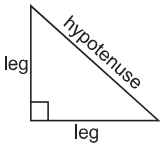


hexagon ..... a polygon with six sides



Vocabulary

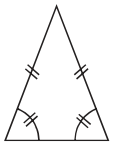
hypotenuse ..... the longest side of a right triangle; the side opposite the right angle in a right triangle



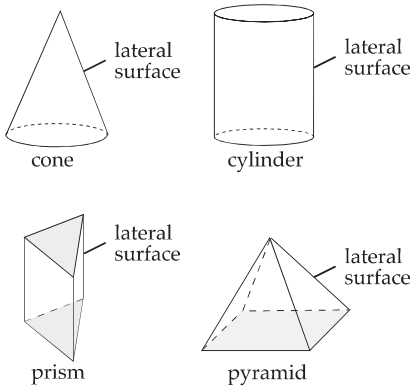
intersect ..... to meet or cross at one point

intersection ..... the point at which two lines meet

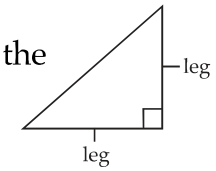
isosceles triangle ..... a triangle with at least two congruent sides and two congruent angles



lateral ..... a surface on the side of a geometric figure, as opposed to the base

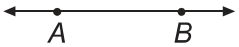


leg ..... in a right triangle, one of the two sides that form the right angle



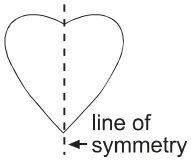
length (*l*) ..... a one-dimensional measure that is the measurable property of line segments

line ($\overleftrightarrow{AB}$) ..... a straight line that is endless in length

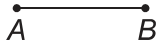


Vocabulary

line of symmetry ..... a line that divides a figure into two congruent halves that are mirror images of each other

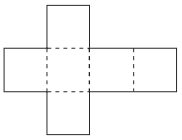


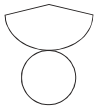
line segment (—) ..... a portion of a line that has a defined beginning and end
Example: The line segment AB is between point A and point B and includes point A and point B.



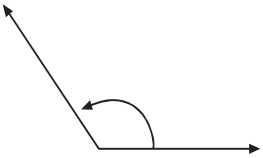
measure (m) of an angle (∠) ..... the number of degrees (°) of an angle

net ..... a plan which can be used to make a model of a solid; a two-dimensional shape that can be folded into a three-dimensional figure

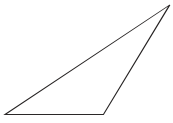

net of a cube


net of cone

obtuse angle ..... an angle with a measure of more than 90° but less than 180°



obtuse triangle ..... a triangle with one obtuse angle



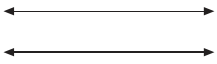
ordered pair ..... the location of a single point on a rectangular coordinate system where the digits represent the position relative to the x-axis and y-axis
Example: (x, y) or (3, 4)

Vocabulary

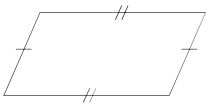
origin ..... the graph of zero (0) on the number line *or* the intersection of the x-axis and y-axis in a coordinate plane, described by the ordered pair $(0,\ 0)$

parallel ($\parallel$) ..... being an equal distance at every point so as to never intersect

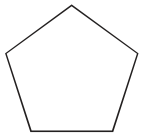
parallel lines ..... two lines in the same plane that never meet; also, lines with equal slopes



parallelogram ..... a quadrilateral with two pairs of parallel sides



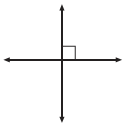
pentagon ..... a polygon with five sides



perimeter (P) ..... the length of the boundary around a figure; the distance around a polygon

perpendicular ($\perp$) ..... forming a right angle

perpendicular lines ..... two lines that intersect to form right angles



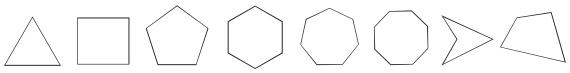
pi (π) ..... the symbol designating the ratio of the circumference of a circle to its diameter, with an approximate value of either 3.14 or $\frac{22}{7}$

plane ..... an undefined, two-dimensional (no depth) geometric surface that has no boundaries specified; a flat surface

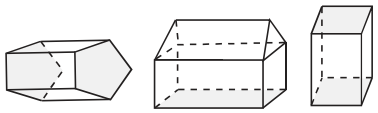
Vocabulary

point ..... a location in space that has no length or width

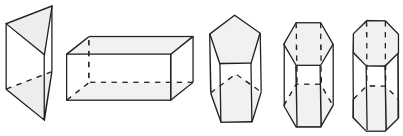
polygon ..... a closed plane figure whose sides are straight and do not cross
Example: triangle (3 sides), quadrilateral (4 sides), pentagon (5 sides), hexagon (6 sides), heptagon (7 sides), octagon (8 sides); concave, convex



polyhedron ..... a three-dimensional figure in which all surfaces are polygons

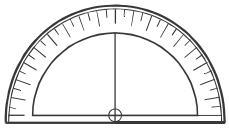


prism ..... a three-dimensional figure (polyhedron) with congruent, polygonal bases and lateral faces that are all parallelograms



proportion ..... a mathematical sentence stating that two ratios are equal
Example: The ratio of 1 to 4 equals 25 to 100, that is $\frac{1}{4} = \frac{25}{100}$.

protractor ..... an instrument used for measuring and drawing angles



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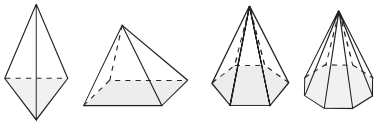
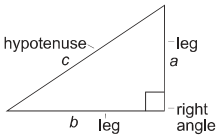
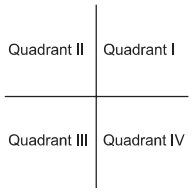
pyramid ..... a three-dimensional figure (polyhedron) with a single base that is a polygon and whose faces are triangles and meet at a common point (vertex)



Pythagorean theorem ..... the square of the hypotenuse (c) of a right triangle is equal to the sum of the squares of the legs (a and b)
Example: $a^2 + b^2 = c^2$

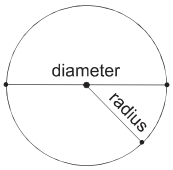


quadrant ..... any of four regions formed by the axes in a rectangular coordinate system



quadrilateral ..... polygon with four sides
Example: square, parallelogram, trapezoid, rectangle, rhombus, concave quadrilateral, convex quadrilateral

radius (r) ..... a line segment extending from the center of a circle or sphere to a point on the circle or sphere; (plural: *radii*)

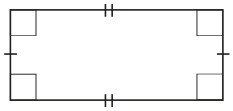


ratio ..... the quotient of two numbers used to compare two quantities
Example: The ratio of 3 to 4 is $\frac{3}{4}$.

Vocabulary

ray (→) ..... a portion of a line that begins at a point and goes on forever in one direction

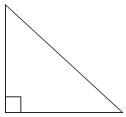
rectangle ..... a parallelogram with four right angles



rectangular prism ..... a six-sided prism whose faces are all rectangular
Example: a brick

right angle ..... an angle whose measure is exactly 90°

right triangle ..... a triangle with one right angle



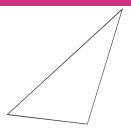
rounded number ..... a number approximated to a specified place
Example: A commonly used rule to round a number is as follows.

- If the digit in the first place after the specified place is 5 or more, *round up* by adding 1 to the digit in the specified place ($\underline{4}61$ rounded to the nearest hundred is 500).
- If the digit in the first place after the specified place is less than 5, *round down* by *not* changing the digit in the specified place ($\underline{4}41$ rounded to the nearest hundred is 400).

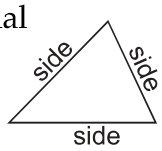
scale factor ..... the ratio between the lengths of corresponding sides of two similar figures

Vocabulary

scalene triangle ..... a triangle with no congruent sides

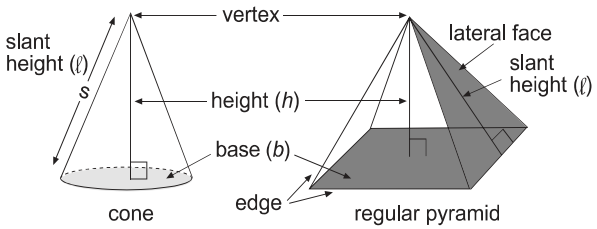


side ..... the edge of a two-dimensional geometric figure
Example: A triangle has three sides.



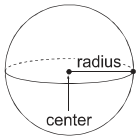
similar figures ..... figures that have the same shape but not necessarily the same size

slant height (ℓ) ..... the shortest distance from the vertex of a right circular cone to the edge of its base; the perpendicular distance from the vertex of a pyramid to one edge of its base

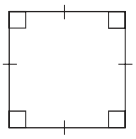


solid figures ..... three-dimensional figures that completely enclose a portion of space
Example: rectangular solid and a sphere

sphere ..... a three-dimensional figure in which all points on the surface are the same distance from the center



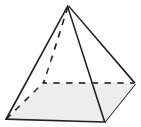
square ..... a rectangle with four sides the same length



Vocabulary

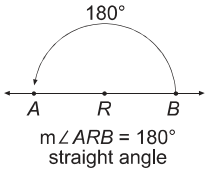
square (of a number) ..... the result when a number is multiplied by itself or used as a factor twice
Example: 25 is the square of 5.

square pyramid ..... a pyramid with a square base and four faces that are triangular



square units ..... units for measuring area; the measure of the amount of an area that covers a surface

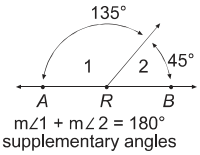
straight angle ..... an angle whose measure is exactly 180°



substitute ..... to replace a variable with a numeral
Example: $8a + 3$
$8 \bullet 5 + 3$

sum ..... the result of an addition
Example: In $6 + 8 = 14$,
14 is the sum.

supplementary angles ..... two angles, the sum of which is exactly 180°

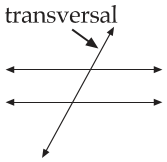


surface area (*S.A.*)
(of a geometric solid) ..... the sum of the areas of the faces of the figure that create the geometric solid

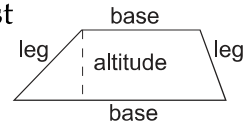
three-dimensional
(3-dimensional) ..... existing in three dimensions; having length, width, and height

Vocabulary

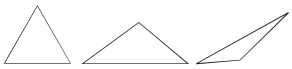
transversal ..... a line that intersects two or more other (usually parallel) lines in the same plane



trapezoid ..... a quadrilateral with just one pair of opposite sides parallel



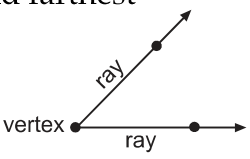
triangle ..... a polygon with three sides; the sum of the measures of the angles is 180°



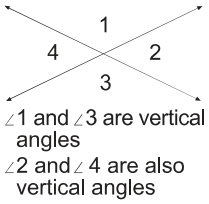
two-dimensional (2-dimensional) ..... existing in two dimensions; having length and width

variable ..... any symbol that could represent a number

vertex ..... the common endpoint from which two rays begin or the point where two lines intersect; the point on a triangle or pyramid opposite to and farthest from the base; (plural: *vertices*); vertices are named clockwise or counterclockwise



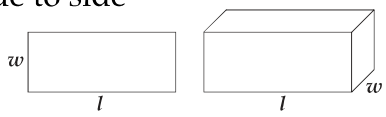
vertical angles ..... the opposite angles formed when two lines intersect



Vocabulary

volume (*V*) ..... the amount of space occupied in three dimensions and expressed in cubic units
Example: Both capacity and volume are used to measure empty spaces; however, *capacity* usually refers to *fluids*, whereas *volume* usually refers to *solids*.

width (*w*) ..... a one-dimensional measure of something side to side



***x*-axis** ..... the horizontal (↔) axis on a coordinate plane

***x*-coordinate** ..... the first number of an ordered pair

***y*-axis** ..... the vertical (↕) axis on a coordinate plane

***y*-coordinate** ..... the second number of an ordered pair