Vocabulary

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

angle (∠) .... two rays extending from a common endpoint called the vertex; measures of angles are described in degrees (°)
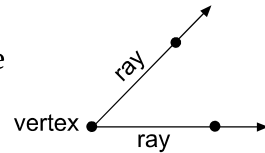
circle .... the set of all points in a plane that are all the same distance from a given point called the center
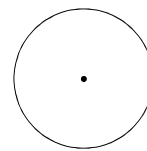
congruent (≅) .... having exactly the same shape and size

corresponding .... in the same location in their respective figures

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

cross multiplication .... a method for solving and checking proportions; a method for finding a missing numerator or denominator in equivalent fractions or ratios by making the cross products equal
Example: Solve this proportion by doing the following.

$$\frac{n}{9} = \frac{8}{12}$$

$$\frac{n}{9} \diagdown \diagup \frac{8}{12}$$

$$12 \times n = 9 \times 8$$

$$12n = 72$$

$$n = \frac{72}{12}$$

$$n = 6$$

Solution:

$$\frac{\textcircled{6}}{9} = \frac{8}{12}$$

Vocabulary

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

denominator ....the bottom number of a fraction, indicating the number of equal parts a whole was divided into
Example: In the fraction $\frac{2}{3}$ the denominator is 3, meaning the whole was divided into 3 equal parts.

distributive property ....the product of a number and the sum or difference of two numbers is equal to the sum or difference of the two products
Examples: $x(a + b) = ax + bx$
  $5(10 + 8) = 5 \bullet 10 + 5 \bullet 8$

equation ....a mathematical sentence stating that the two expressions have the same value
Example: $2x = 10$

equiangular ....a figure with all angles congruent

equilateral ....a figure with all sides congruent
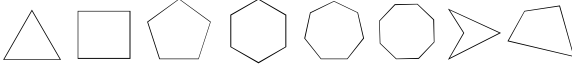
fraction ....any part of a whole
Example: One-half written in fractional form is $\frac{1}{2}$.

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 plane that contains the base
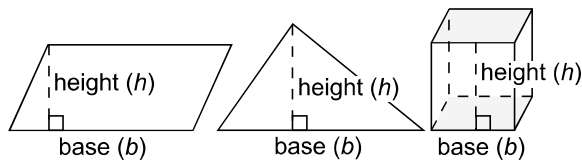
Vocabulary

integers ....the numbers in the set
{… , -4, -3, -2, -1, 0, 1, 2, 3, 4, …}

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

numerator ....the top number of a fraction, indicating the
number of equal parts being considered
Example: In the fraction $\frac{2}{3}$, the numerator is 2.

perimeter (*P*) ....the distance around a figure

polygon ....a closed-plane figure, having at least three
sides that are line segments and are connected
at their endpoints
Examples: triangle (3 sides),
quadrilateral (4 sides),
pentagon (5 sides), hexagon (6 sides), heptagon
(7 sides), octagon (8 sides); concave, convex

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

ratio ....the comparison of two quantities
Example: The ratio of *a* and *b* is *a*:*b* or $\frac{a}{b}$, where
$b \neq 0$.

Vocabulary

regular polygon ....a polygon that is both *equilateral* (all sides congruent) and *equiangular* (all angles congruent)

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 (461 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 (441 rounded to the nearest hundred is 400).

scale factor ....the constant that is multiplied by the lengths of each side of a figure that produces an image that is the same shape as the original figure

side ....the edge of a polygon, the face of a polyhedron, or one of the rays that make up an angle
Example: A triangle has three sides.

side   side
side
*edge of a polygon*

side
face of a polyhedron

side
side
ray of an angle
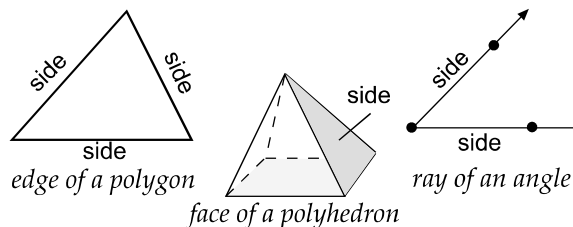
Vocabulary

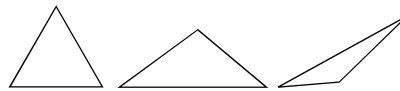**similar figures (~)** ....figures that are the same shape, have corresponding congruent angles, and have corresponding sides that are proportional in length

solve ....to find all numbers that make an equation or inequality true

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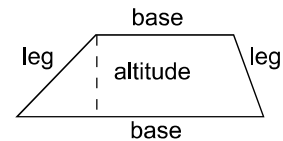
triangle ....a polygon with three sides

value (of a variable) ....any of the numbers represented by the variable

variable ....any symbol, usually a letter, which could represent a number