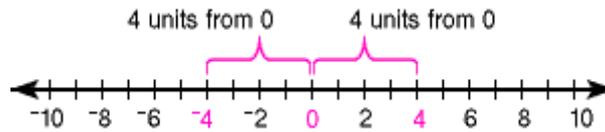


1. absolute value :

The distance from a point on the number line to zero

Example:

$$|-4| = 4; \quad |4| = 4$$



2. addition property of opposites :

The property which states that the sum of a number and its opposite is zero

Examples:

$$5 + -5 = 0 \quad -15 + 15 = 0$$

3. algebraic expression :

An expression that is written using one or more variables

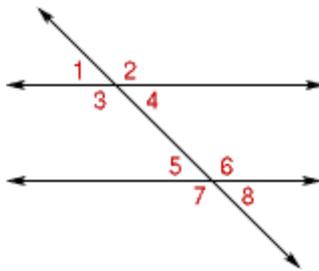
Examples:

$$3x \quad x - 4 \quad 2a + 5 \quad a + b$$

4. alternate exterior angles :

A pair of angles on the outer sides of two lines cut by a transversal, but on opposite sides of the transversal

Example:

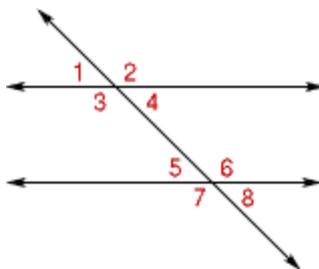


$\angle 1$ and $\angle 8$ and $\angle 2$ and $\angle 7$ are alternate exterior angles

5. alternate interior angles :

A pair of angles on the inner sides of two lines cut by a transversal, but on opposite sides of the transversal

Example:



$\angle 3$ and $\angle 6$ and $\angle 4$ and $\angle 5$ are alternate interior angles

6. angle :

A geometric figure formed by two rays that have a common endpoint

Examples:



7. arithmetic sequence :

An ordered list of numbers that has a common difference between consecutive terms.

Example:

5, 9, 13, 17, 21, . . .

The common difference is 4.

8. associative property of addition :

The property which states that for all real numbers a , b , and c , their sum is always the same, regardless of their grouping:

$$(a + b) + c = a + (b + c)$$

Example:

$$(2 + 3) + 4 = 2 + (3 + 4)$$

9. associative property of multiplication :

The property which states that for all real numbers a , b , and c , their product is always the same, regardless of their grouping:

$$(a \cdot b) \cdot c = a \cdot (b \cdot c)$$

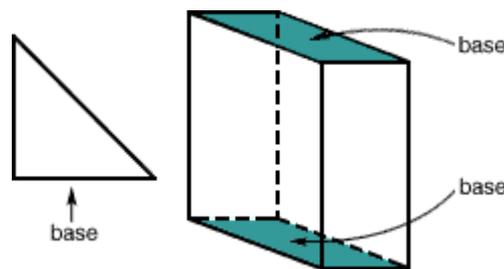
Example:

$$(5 \cdot 6) \cdot 7 = 5 \cdot (6 \cdot 7)$$

10. base :

A side of a polygon or a face of a solid figure by which the figure is measured or named

Examples:



A number used as a repeated factor

Example:

$$8^3 = 8 \times 8 \times 8$$

The base is 8. It is used as a factor three times.

11. biased sample :

A sample that does not fairly represent the population

12. binomial :

The sum of two monomials

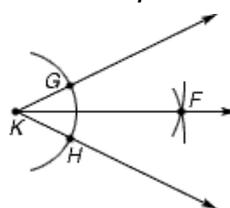
Example:

$$3x + 5y$$

13. bisect :

To divide into two congruent parts

Example:

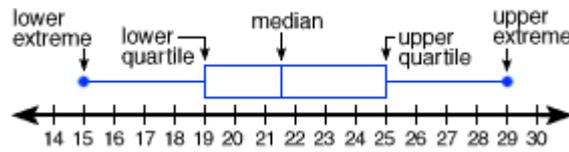


\vec{KF} bisects $\angle GKH$.
 $m\angle GKF = m\angle FKH$

14. box-and-whisker graph :

A graph that shows how far apart and how evenly data are distributed

Example:



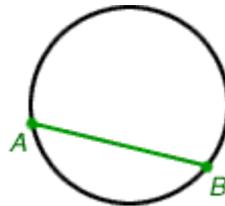
15. central tendency :

Any of three measures (mean, median, mode) that represent averages of a set of data

16. chord :

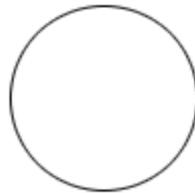
A line segment with endpoints on a circle

Example:



17. circumference :

The distance around a circle



$$C = \pi d$$

18. combination :

An arrangement of items or events in which order does not matter

Example:

Two-letter combinations of A, B, C, and D:

AB	BC	CD
AC	BD	
AD		

There are 6 combinations.

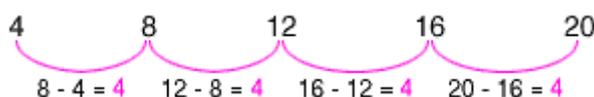
19. common difference :

The difference between any two successive terms in an arithmetic sequence

Example:

4, 8, 12, 16, 20, . . .

Find the differences between the terms.



All of the differences are 4.

So, the common difference is 4.

20. common ratio :

The ratio of any two successive terms in a geometric sequence

Example:

3, -6, 12, -24, ...

$$\frac{\text{second term}}{\text{first term}} \rightarrow \frac{-6}{3} = -2$$

$$\frac{\text{third term}}{\text{second term}} \rightarrow \frac{12}{-6} = -2$$

$$\frac{\text{fourth term}}{\text{third term}} \rightarrow \frac{-24}{12} = -2$$

The common ratio is -2.

21. commutative property of addition :

The property of addition that allows two or more addends to be added in any order without changing the sum;

$$a + b = b + a$$

Examples:

$$c + 4 = 4 + c$$

$$(2 + 5) + 4r = 4r + (2 + 5)$$

22. commutative property of multiplication :

The property of multiplication that allows two or more factors to be multiplied in any order without changing the product

$$a \cdot b = b \cdot a$$

Examples:

$$3 \cdot c = c \cdot 3$$

$$4 \cdot 5 \cdot y7 = 5 \cdot 4 \cdot y7$$

23. complement :

In probability, the complement of an event is all outcomes different from the favorable outcome. The sum of the probability of an event and its complement is

1.

Example:

The number cube is labeled 1-6.



$$\text{Event: rolling a 2} \rightarrow P(2) = \frac{1}{6}$$

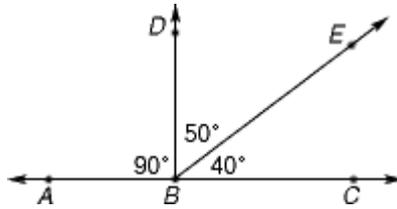
$$\text{Complement: not rolling a 2} \rightarrow P(\text{not 2}) = \frac{5}{6}$$

$$P(2) + P(\text{not 2}) = \frac{1}{6} + \frac{5}{6} = 1$$

24. complementary angles :

Two angles whose measures have a sum of 90°

Example:



$\angle DBE$ and $\angle EBC$ are complementary.

25. composite number :

A whole number that has more than two whole-number factors

Examples:

4	Factors are 1, 2, and 4.
12	Factors are 1, 2, 3, 4, 6, and 12.
25	Factors are 1, 5, and 25.

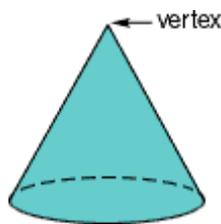
26. compound interest :

Interest computed on both the principal and the interest previously earned

27. cone :

A solid figure with a circular base and one vertex

Example:



28. congruent :

Having the same size and shape

Example:



$\triangle ABC$ is congruent to $\triangle DEF$.

29. converge :

To approach some fixed value

Example:

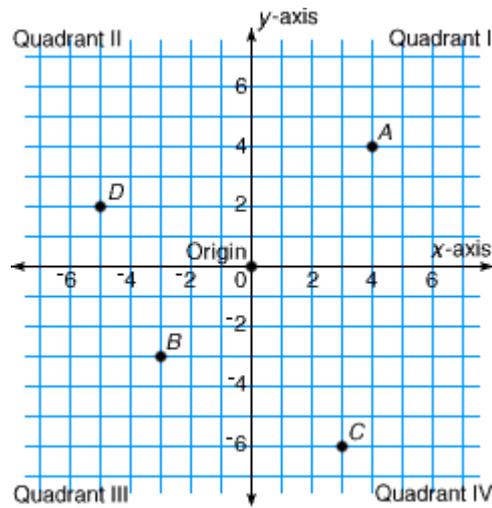
48, 24, 12, 6, 3, . . .

The sequence converges, shrinking toward 0.

30. coordinate plane :

A plane formed by two perpendicular number lines called axes; every point on the plane can be named by an ordered pair of numbers.

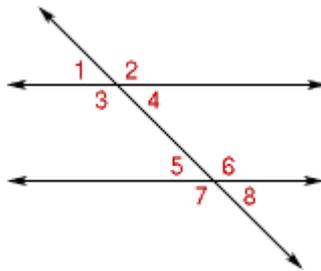
Example:



31. corresponding angles :

Angles that are in the same position and are formed by a transversal cutting two or more lines

Example:

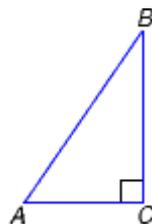


$\angle 2$ and $\angle 6$ are corresponding angles.

32. cosine :

In a right triangle, the ratio of the length of the side adjacent to an angle to the length of the hypotenuse

Example:

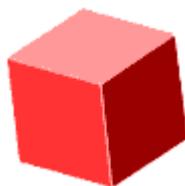


$$\cos A \text{ (cosine of } \angle A) = \frac{\text{length of adjacent side}}{\text{length of hypotenuse}} = \frac{AC}{AB}$$

33. cube :

A square prism with six congruent square faces

Example:



34. cube root :

One of the three equal factors of a number

Example:

3 is the cube root of 27.

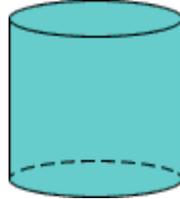
$$3 \times 3 \times 3 = 27$$

$$3^3 = 27$$

35. cylinder :

A solid figure with two parallel, congruent circular bases connected by a curved surface

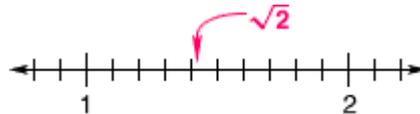
Example:



36. density property for real numbers :

The property which states that between any two real numbers, there is always another real number

Example:



$\sqrt{2}$ is between 1 and 2.

37. dependent events :

Events for which the outcome of one event is affected by the outcome of the other event

Example:



Drawing a card and not replacing it, and then drawing a second card are dependent events

38. diagonal :

A line segment that connects two non-adjacent vertices of a polygon

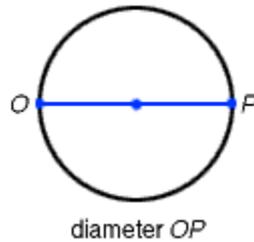
Example:



39. diameter :

A chord that passes through the center of a circle

Example:



40. dilation :

A transformation that enlarges or reduces a figure

Example:



41. direct variation :

A relationship between two variables such that the data increase or decrease together at a constant rate

Example:

Ken's Income					
Hours worked, h	1	2	3	4	5
Pay (in dollars), p	5.75	11.50	17.25	23.00	28.75

42. distributive property of multiplication over addition :

The property which states that multiplying a sum by a number gives the same result as multiplying each addend by the number and then adding the products

$$a(b + c) = a \times b + a \times c$$

Examples:

$$3(4 + 5) = 3 \times 4 + 3 \times 5$$

$$3(a + b) = 3a + 3b$$

43. diverge :

To get larger without bound

Example:

1, 2, 4, 8, 16, . . .

The pattern diverges.

44. domain :

The set of the first coordinates of the ordered pairs of a relation; see range

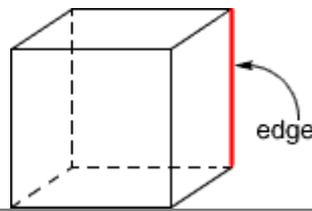
Example:

In the relation
 $\{(2,20), (3,30), (4,40), (5,50)\}$,
 the domain is $\{2, 3, 4, 5\}$.

45. edge :

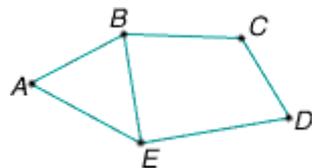
The line segment along which two faces of a polyhedron intersect

Example:



A connection between vertices in a network

Example:



46. equation :

A mathematical sentence that uses an equals sign to show that two quantities are equal

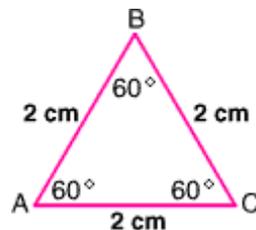
Examples:

$$10 = 3 + 7 \quad x = 3 + 7 \quad y = x + 4$$

47. equilateral triangle :

A triangle with three congruent sides and three congruent angles

Example:



48. equivalent ratios :

Ratios that make the same comparison

Examples:

$$\frac{5}{9} = \frac{10}{18} \quad 5:9 = 10:18$$

49. experimental probability :

The ratio of the number of times the event occurs to the total number of trials or times the activity is performed

$$\text{experimental probability} = \frac{\text{number of times event occurs}}{\text{total number of trials}}$$

50. exponent:

The number that indicates how many times the base is used as a factor

Example:

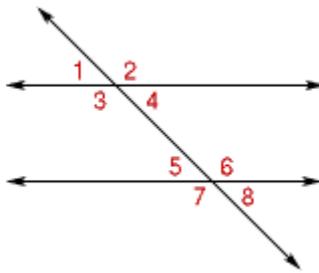
$$2^3 = 2 \times 2 \times 2 = 8$$

The exponent is 3, indicating that 2 is used as a factor three times.

51. exterior angles :

The angles on the outer sides of two lines cut by a transversal

Example:



Angles 1, 2, 7, and 8 are exterior angles.

52. factorial :

The product of all whole numbers, except zero, less than or equal to a number

Example:

5! ← Read as 5 factorial.

$$5! = 5 \times 4 \times 3 \times 2 \times 1$$

53. Fibonacci Sequence :

The infinite sequence of numbers formed by adding two successive numbers to get the next number

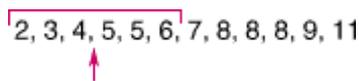
Example:

1, 1, 2, 3, 5, 8, 13, 21, . . .

54. first quartile :

The median of the lower half of a set of data

Example:



The first quartile is 4.5.

55. formula :

A rule that is expressed using symbols

Examples:

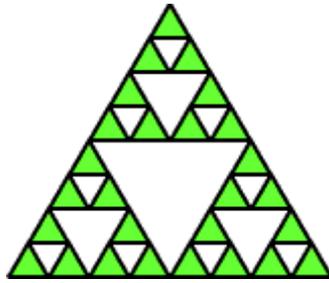
The area and the circumference of a circle can be computed by using the following formulas:

$$A = \pi r^2 \quad C = \pi d$$

56. fractal :

A structure with repeating patterns containing shapes that are like the whole but of different sizes throughout

Example:



57. function :

A relation in which no two ordered pairs have the same x-value

Example:

Function

$$\{(1,5), (2,6), (3,7), (4,8)\}$$

Not a Function

$$\{(1,5), (1,6), (2,7), (3,8)\}$$

1 is matched with 5 and 6.

58. fundamental counting principle :

The principle which states that all possible outcomes in a sample space can be found by multiplying the number of ways each event can occur

Example:

For dinner, Marsha can choose from 2 proteins (beef and fish), 4 vegetables (beans, broccoli, carrots, and corn), and 2 breads (rolls and biscuits). How many different protein-vegetable-bread selections can she make for dinner?

$$2 \text{ Proteins} \times 4 \text{ Vegetables} \times 2 \text{ Breads} = 16$$

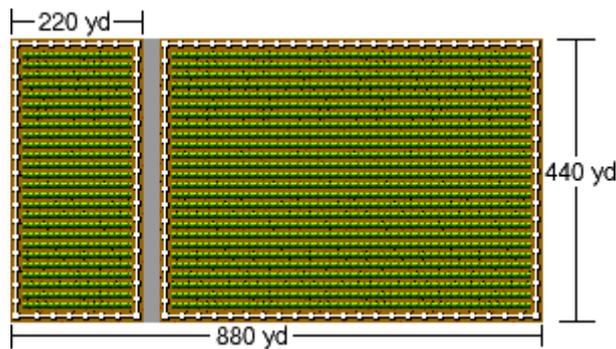
So, Marsha can choose from 16 selections.

59. geometric probability :

The probability that a random point is located in a particular part, or subregion, of a larger region

Example:

A farmer's cornfield is shown in the diagram below.



The probability that a lightning bolt that strikes will hit the left field is given by this ratio:

$$\frac{\text{area of left field}}{\text{total area of the farmer's field}}$$

$$\frac{220 \times 440}{880 \times 440} =$$

Compute the areas.

$$\frac{96,800}{387,200} =$$

$$96800 \div 387200 = 0.25$$

Use a calculator to find the probability.

So, the probability is 25%, or .

60. geometric sequence :

An ordered list of numbers that has a common ratio between consecutive terms.

Example:

2, 6, 18, 54, . . .

61. golden ratio :

The ratio $\frac{1+\sqrt{5}}{2}$, or approximately 1.61 to 1

62. greatest common factor (GCF) :

The largest common factor of two or more given numbers

Example:

18: 1, 2, 3, **6**, 9, 18

30: 1, 2, 3, 5, **6**, 10, 15, 30

6 is the GCF of 18 and 30.

63. greatest possible error (GPE) :

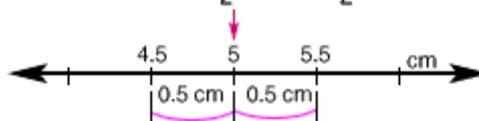
One half of the unit used in a measurement

Example:

recorded measurement: 5 cm

unit used: 1 cm

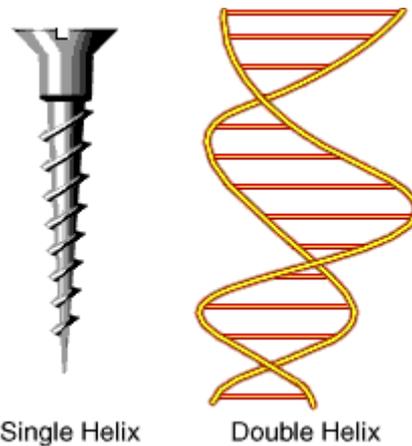
greatest possible error: $\frac{1}{2} \times 1 \text{ cm} = \frac{1}{2} \text{ cm}$, or 0.5 cm



64. helix :

A spiral-shaped curve in space that goes around an axis

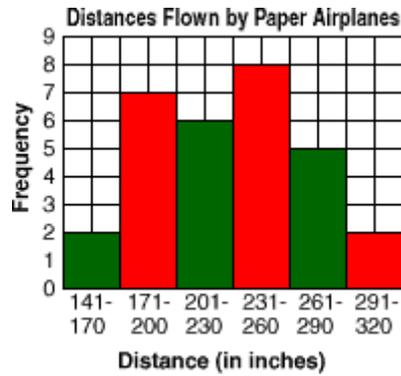
Examples:



65. histogram :

A bar graph that shows the frequency of data within equal intervals

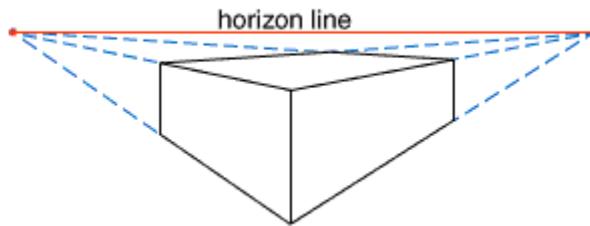
Example:



66. horizon line :

A horizontal line that represents the viewer's eye level

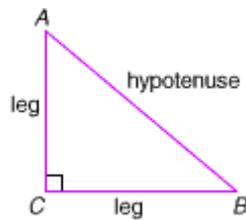
Example:



67. hypotenuse :

In a right triangle, the side opposite the right angle; the longest side in a right triangle

Example:



68. identity property of one :

The property which states that multiplying a number by 1 does not change the number's value

Examples:

$$6 \times 1 = 6 \quad 1 \cdot a = a$$

69. identity property of zero :

The property which states that adding zero to a number does not change the number's value

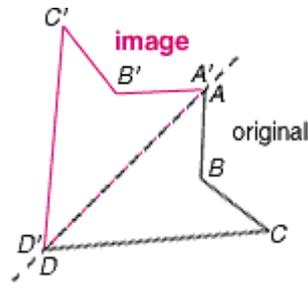
Examples:

$$3 + 0 = 3 \quad 0 + y = y$$

70. image :

The figure in a new position, location, or size that is the result of a transformation

Example:



$A'B'C'D'$ is the image of $ABCD$.

71. independent events :

Events for which the outcome of one event is not affected by the outcome of another event

Example:



Tossing the coin and rolling the number cube are independent events.

72. inequality :

A mathematical sentence that shows the relationship between quantities that are not equal, using $<$, $>$, \leq , \geq , or \neq

Examples:

$$6 < 9$$

$$3x \geq 12$$

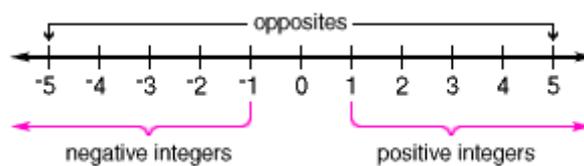
$$a \neq b$$

$$y \leq x + 5$$

73. integers :

The set of whole numbers and their opposites

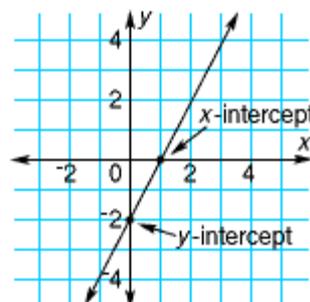
Example:



74. intercept :

The place (or point) where a graph crosses the axis

Example:

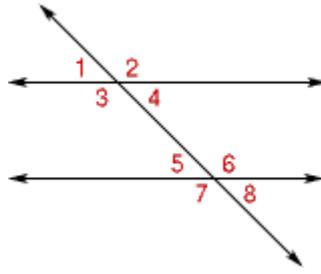


The x-intercept is 1 and the y-intercept is -2 .

75. interior angles :

Angles on the inner sides of two lines cut by a transversal

Example:



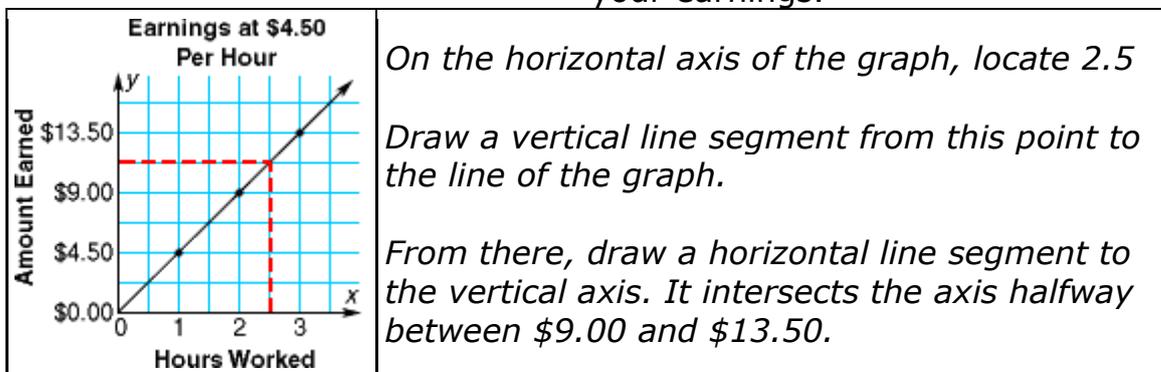
Angles 3, 4, 5, and 6 are interior angles.

76. interpolation :

An estimated value between two known values

Example:

Suppose you work for 2.5 hr and are paid \$4.50 per hour. Use the graph to predict your earnings.

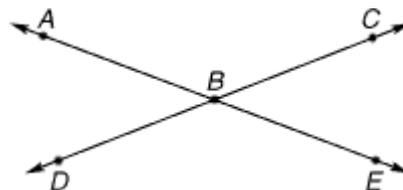


So, if you work 2.5 hr, you will earn \$11.25.

77. intersecting lines :

Two lines that cross at exactly one point

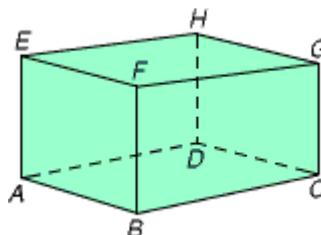
Example:



78. intersecting planes :

Flat surfaces that intersect in a line, such as the sides of a box

Example:



79. irrational number :

A number that cannot be expressed as a repeating or terminating decimal

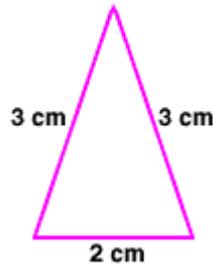
Example:

$$\sqrt{2} \approx 1.414213562 \dots$$

80. isosceles triangle :

A triangle with two congruent sides

Example:

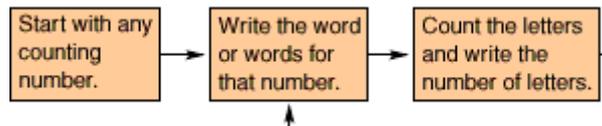


81. iteration :

The repetition of a process or set of instructions

Example:

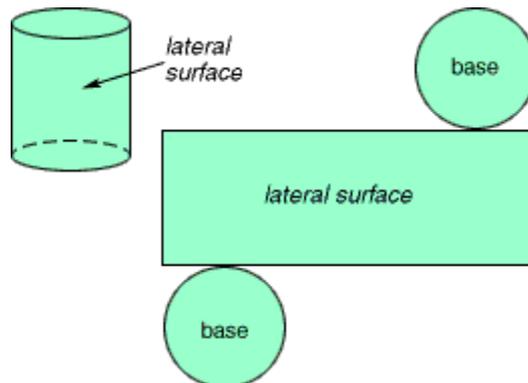
The following iteration diagram models the rules of a game.



82. lateral surface :

The curved surface of a cylinder or a cone

Example:



83. least common denominator (LCD) :

The smallest number, other than zero, that is a multiple of two or more denominators

Example:

$$\begin{array}{l} \frac{1}{4} = \frac{3}{12} \\ \frac{5}{6} = \frac{10}{12} \end{array} \left. \begin{array}{l} \leftarrow \\ \leftarrow \end{array} \right\} \text{LCD for } \frac{1}{4} \text{ and } \frac{5}{6}$$

84. least common multiple (LCM) :

The smallest number, other than zero, that is a multiple of two or more given numbers

Example:

6: 6, 12, **18**, 24, 30, . . .

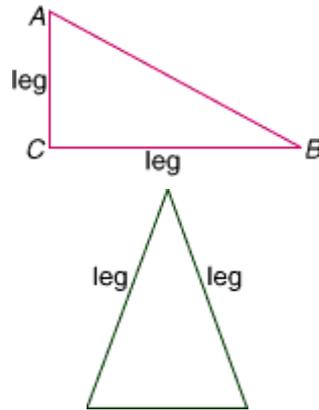
9: 9, **18**, 27, 36, 45, . . .

The LCM of 6 and 9 is 18.

85. leg :

In a right triangle, either of the two sides that intersect to form the right angle; in an isosceles triangle, one of the two congruent sides

Examples:



86. like terms :

Expressions that have the same variables and the same powers of the variables.

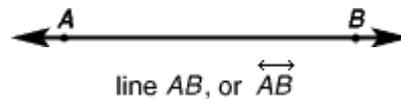
Example:

$8y$, $^{-}4y$, and $9.1y$ are like terms.

87. line :

A set of points that extends without end in opposite directions

Example:



88. line of best fit :

A straight line drawn through as much data as possible on a scatterplot

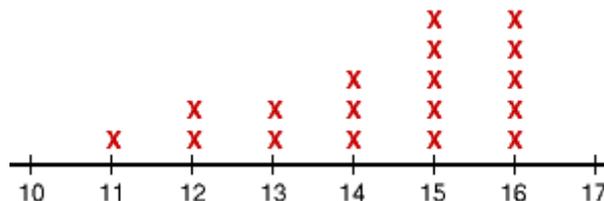
Example:



89. line plot :

A number line with dots or other marks to show frequency

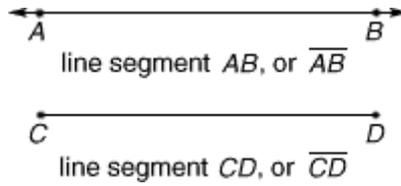
Example:



90. line segment :

A part of a line or ray, consisting of two endpoints and all points between those endpoints

Examples:

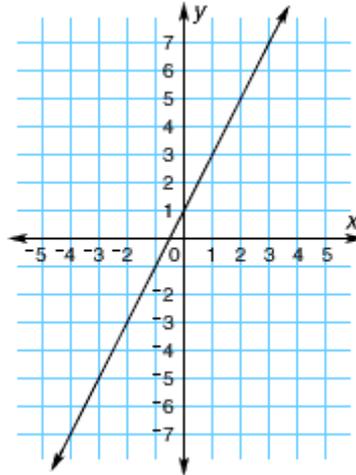


91. linear equation :

An equation whose graph is a straight line

Example:

The linear equation for the graph below is $y = 2x + 1$.



92. lower extreme :

The least number in a set of data

Example:

2, 3, 4, 5, 5, 6, 7, 8, 8, 8, 9, 11

The lower extreme is 2.

93. mathematical probability :

The number used to describe the chance that an event will occur

$$P = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}}$$

94. mean :

The sum of a set of numbers divided by the number of addends

Example:

2, 3, 4, 5, 5, 8

$$(2 + 3 + 4 + 5 + 5 + 8) \div 6 = 4.5$$

The mean is 4.5

95. measure of central tendency :

A measure used to describe data; the mean, median, and mode are measures of central tendency

96. median :

The middle number or the average of the two middle numbers in an ordered set of data

Examples:

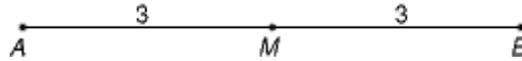
1, 3, 4, 6, 7
↑ The median is 4.

1, 3, 4, 5, 6, 8
↑ The median is 4.5.

97. midpoint :

The point that divides a line segment into two congruent line segments

Example:



M is the midpoint of \overline{AB} .

98. mode :

The number or numbers that occur most frequently in a set of data; there can be one mode, more than one mode or no mode.

Examples:

2, 3, 4, 5, 5, 6, 7, 8, 8, 8, 9, 11
The mode is 8.

2, 3, 4, 5, 5, 5, 7, 8, 8, 8, 9, 11
The modes are 5 and 8.

2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 17
There is no mode.

99. monomial :

An expression that is a number, a variable, or the product of a number and one or more variables

Examples:

$3x$ 7 $5xy$

100. multiple :

A number that is the product of a given number and a whole number

Examples:

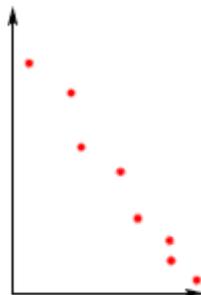
Multiples of 3: 3, 6, 9, 12, 15, . . .

Multiples of 8: 8, 16, 24, 32, 40, . . .

101. negative correlation :

A relation in which the values of one variable increase as the values of the other variable decrease

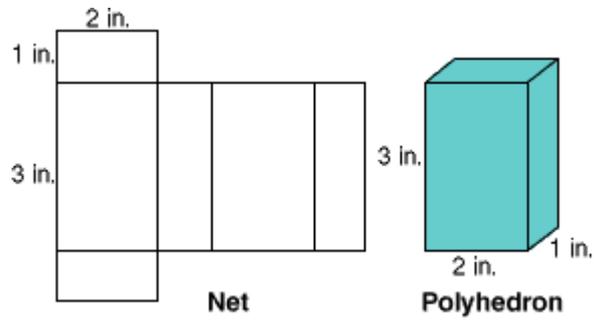
Example:



102. net :

A connected arrangement of polygons in a plane that can be folded up to form a polyhedron

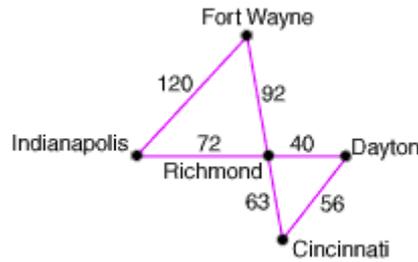
Example:



103. network :

A figure made up of vertices and edges that show how objects are connected

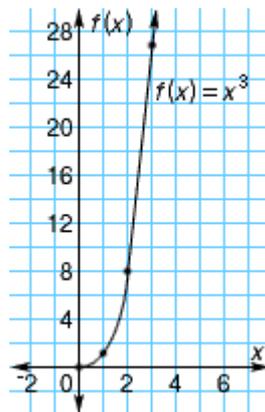
Example:



104. nonlinear function :

A function whose graph is not a straight line

Example:



105. numerical expression :

An expression that includes numbers and at least one operation (addition, subtraction, multiplication, or division)

Examples:

6 + 8.1 57 - 48 21.6 - 18.6

106. odds :

A comparison of favorable outcomes and unfavorable outcomes

Example:

Suppose you are playing a game in which you roll a number cube labeled with the numbers 1, 2, 3, 4, 5, and 6. What are the odds against rolling a 2?



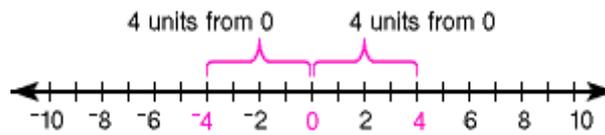
odds against = $\frac{5}{1}$ ← $\frac{\text{number of unfavorable outcomes}}{\text{number of favorable outcomes}}$

odds in favor = $\frac{1}{5}$ ← $\frac{\text{number of favorable outcomes}}{\text{number of unfavorable outcomes}}$

107. opposites :

Two numbers that are represented by points on the number line that are the same distance from zero but are on opposite sides of zero

Example:



4 and -4 are opposites.

108. order of operations :

The order in which the operations are done within an expression

1.	Do the operations inside parentheses or above and below a fraction bar.
2.	Find the value of any numbers in exponent form.
3.	Multiply and divide from left to right.
4.	Add and subtract from left to right.

Example:

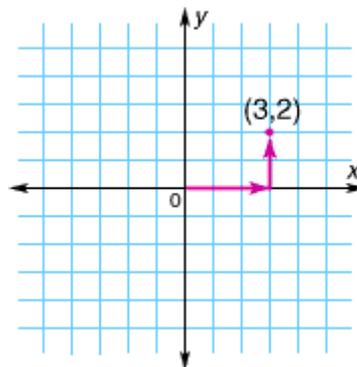
$10 \div (2 + 8) \times 2^3 - 4$	<i>Add inside parentheses. x</i>
$10 \div 10 \times 2^3 - 4$	<i>Clear exponent. x</i>
$10 \div 10 \times 8 - 4$	<i>Divide and multiply. x</i>
$8 - 4$	<i>Subtract.</i>
4	<i>.</i>

109. ordered pair :

A pair of numbers used to locate a point on a coordinate plane

Example:

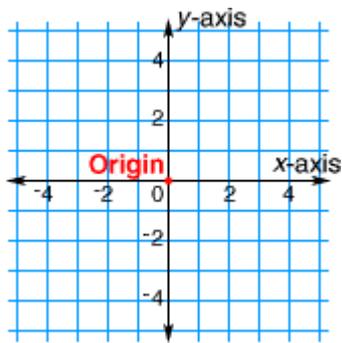
(3,2) represents 3 spaces to the right of zero and 2 spaces up.



110. origin :

The point on the coordinate plane where the x-axis and the y-axis intersect, (0,0)

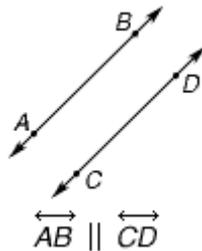
Example:



111. parallel lines :

Lines in a plane that do not intersect

Example:

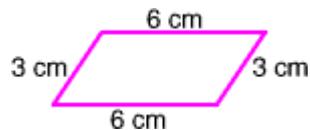


Read: Line *AB* is parallel to line *CD*.

112. parallelogram :

A quadrilateral whose opposite sides are parallel and congruent

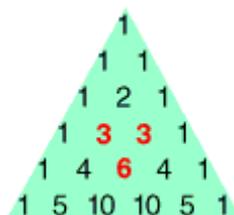
Example:



113. Pascal's triangle :

A triangular arrangement of numbers in which each row starts and ends with 1, and each other number is the sum of the two numbers above it

Example:



114. perfect square :

A number that has integers as its square roots

Example:

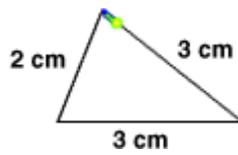
16 is a perfect square.

$$\sqrt{16} = 4 \quad \sqrt{-16} = -4$$

115. perimeter :

The distance around a polygon

Example:



$$3 \text{ cm} + 3 \text{ cm} + 2 \text{ cm} = 8 \text{ cm}$$

The perimeter of this figure is 8 centimeters.

116. permutation :

An arrangement of items or events in which order is important

Example:

Two-letter permutations of A, B, C, and D:

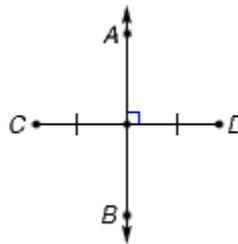
AB	BA	CA	DA
AC	BC	CB	DB
AD	BD	CD	DC

There are 12 permutations.

117. perpendicular bisector :

A line or line segment that intersects a given line segment at its midpoint and forms right angles

Example:

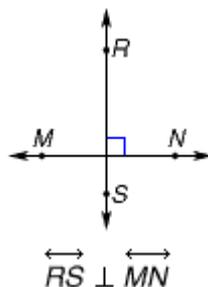


\overleftrightarrow{AB} is the perpendicular bisector of \overline{CD} .

118. perpendicular lines :

Lines that intersect to form 90° angles, or right angles

Example:

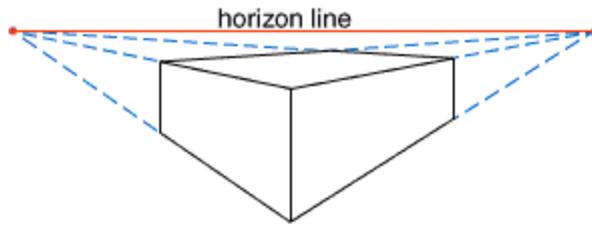


Read: Line RS is perpendicular to line MN

119. perspective :

A technique used to make 3-dimensional objects appear to have depth and distance on a flat surface

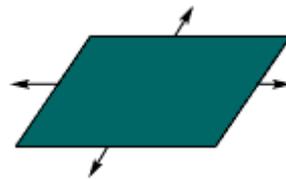
Example:



120. plane :

A set of points forming a flat surface that extends without end in all directions

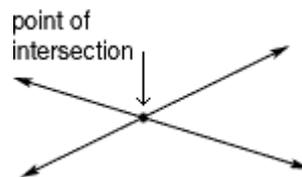
Example:



121. point of intersection :

The point where two or more lines intersect

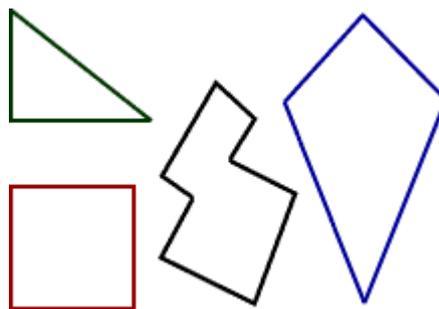
Example:



122. polygon :

A closed plane figure formed by three or more line segments

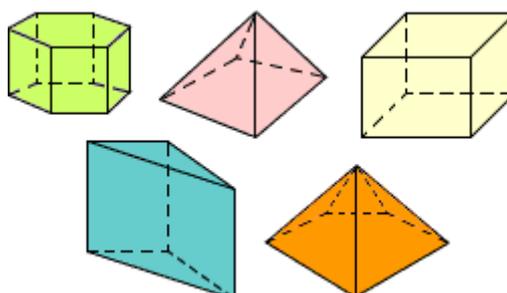
Examples:



123. polyhedron :

A solid figure with flat faces that are polygons

Examples:



124. polynomial :

A monomial or the sum of two or more monomials

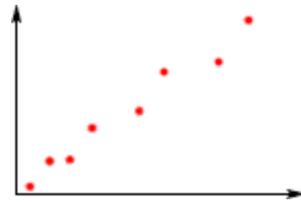
Examples:

$$3a^2 + 8 \qquad a^2 - 4a + 3$$

125. positive correlation :

A relation in which the values of two variables increase or decrease together

Example:



126. power :

The value of a number represented by a base and an exponent

Example:

$$4^3 = 4 \times 4 \times 4 = 64$$

127. precision :

A property of measurement that is related to the unit of measure used; the smaller the unit of measure used, the more precise the measurement is.

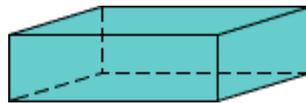
Example:

27 mm is more precise than 3 cm.

128. prism :

A polyhedron whose two bases are congruent, parallel polygons in parallel planes and whose lateral faces are parallelograms

Example:



rectangular prism

129. proportion :

An equation which states that two ratios are equivalent

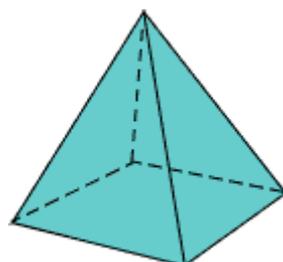
Example:

$$\frac{5}{10} = \frac{1}{2}, \text{ or } 5:10 = 1:2$$

130. pyramid :

A polyhedron with a base that is a polygon and with lateral faces that are triangles which share a common vertex

Example:

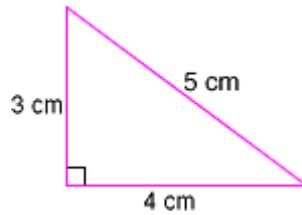


square pyramid

131. Pythagorean Theorem (Pythagorean Property) :

In any right triangle, if a and b are the lengths of the legs and c is the length of the hypotenuse, then $a^2 + b^2 = c^2$

Example:

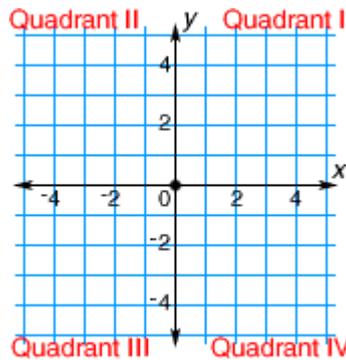


$a^2 + b^2 = c^2$	Replace the variables with the known lengths.
$3^2 + 4^2 = 5^2$	
$9 + 16 = 25$	
$25 = 25$	

132. quadrant :

One of the four regions of the coordinate plane

Example:



133. quadrilateral :

A four-sided polygon

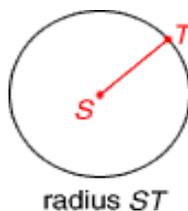
Examples:



134. radius :

A line segment with one endpoint at the center of a circle and the other endpoint on the circle

Example:



135. range :

The difference between the greatest and the least numbers in a set of data

Example:

Month	Jun	Jul	Aug	Sep	Oct	Nov
Temperature	82°F	83°F	83°F	82°F	82°F	80°F

The greatest temperature is 83°F.
 The least temperature is 80°F.
 Since $83 - 80 = 3$, the range is 3°F.

The set of the second coordinates of the ordered pairs of a relation; see *domain*.

Example:

In the relation $\{(2,20), (3,30), (4,40), (5,50)\}$,
 the range is $\{20, 30, 40, 50\}$.

136. rate :

A ratio that compares quantities of different units, such as miles per hour, price per pound, students per class

Example:

$$\text{rate: } \frac{\text{price}}{\text{number of ounces}} \rightarrow \frac{\$3.28}{20 \text{ oz}}$$

137. ratio :

A comparison of two numbers or quantities

Example:

3 to 5, or 3:5, or $\frac{3}{5}$

138. rational number :

Any number that can be expressed as a ratio $\frac{a}{b}$ where a and b are integers and $b \neq 0$

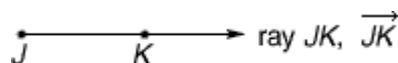
Examples:

0.5 $\frac{3}{5}$ -3 8 $3\frac{9}{10}$

139. ray :

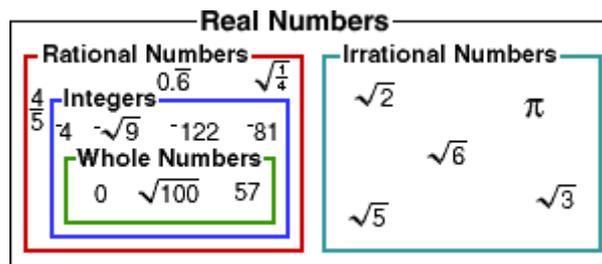
A part of a line that has one endpoint and goes on forever in only one direction

Example:



140. real numbers :

The set of numbers that includes all rational and all irrational numbers



141. reciprocal :

One of two numbers whose product is 1

Example:

$$\frac{2}{3} \times \frac{3}{2} = 1$$

$\frac{3}{2}$ is the reciprocal of $\frac{2}{3}$.

$\frac{2}{3}$ is the reciprocal of $\frac{3}{2}$.

142. rectangle :

A parallelogram with 4 right angles

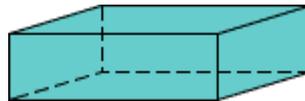
Example:



143. rectangular prism :

A polyhedron whose bases are rectangles and whose other faces are parallelograms

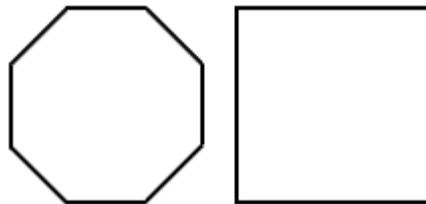
Example:



144. regular polygon :

A polygon in which all sides and all angles are congruent

Example:



145. relation :

A set of ordered pairs

Example:

$$\{(5,1), (10,2), (15,3), (20,4), (25,5)\}$$

146. repeating decimal :

A decimal in which one or more digits repeat endlessly

Examples:

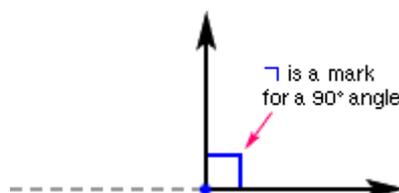
$$0.333 \dots, \text{ or } 0.\overline{3}$$

$$5.272727 \dots, \text{ or } 5.\overline{27}$$

147. right angle :

An angle whose measure is 90°

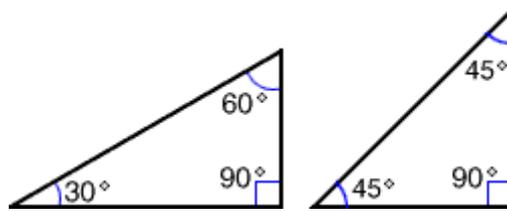
Example:



148. right triangle :

A triangle with exactly one right angle

Examples:



149. sample space :

All possible outcomes in a given situation

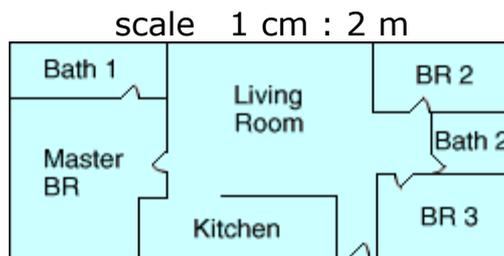
Example:

The sample space for tossing 2 coins is
(H,H), (H,T), (T,H), (T,T).

150. scale :

The ratio of the size of an object or the distance in a drawing to the actual size of the object or the actual distance

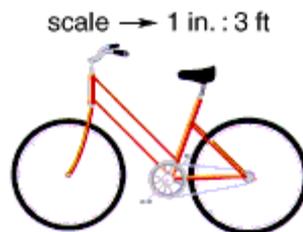
Example:



151. scale drawing :

A drawing whose shape is the same as an actual object and whose size is determined by the scale

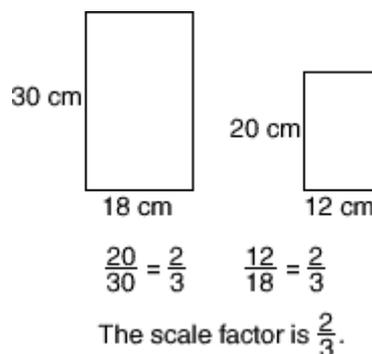
Example:



152. scale factor :

The common ratio for pairs of corresponding sides of similar figures

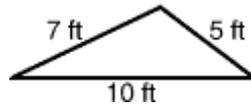
Example:



153. scalene triangle :

A triangle with no congruent sides

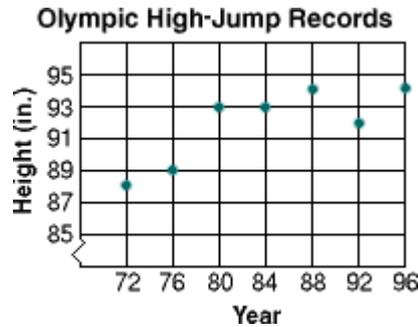
Example:



154. scatterplot :

A graph made by plotting points on a coordinate plane to show the relationship between two variables in a data set

Example:



155. scientific notation :

A method of expressing a number as the product of a number from 1 up to, but not including, 10 and a power of 10

Example:

$$437 = 4.37 \times 10^2$$

156. second quartile :

The median of a set of data

Example:

7.9, 8.0, 8.3, 8.3

The second quartile is between 8.0 and 8.3.

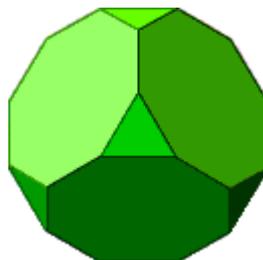
$$(8.0 + 8.3) \div 2 = 16.3 \div 2 = 8.15$$

The second quartile is 8.15.

157. semiregular polyhedron :

A solid formed from patterns of more than one kind of regular polygon

Example:



158. sequence :

An ordered list of numbers

Example:

1, 4, 16, 64, 256, . . .

159. significant digits :

The number of digits used to express the accuracy for a measurement. The number of significant digits is dependent on the unit of measure being used.

Examples:

Measurement	Unit	Number of Units	Significant Digits	Number of Significant Digits
120.1m	0.1 m	1,201	1, 2, 0, 1	4
121 m	1 m	121	1, 2, 1	3
1.2 m	0.1 m	12	1, 2	2
0.048 cm	0.001 cm	48	4, 8	2
3.06 cm	0.01 cm	306	3, 0, 6	3

160. simple interest :

The amount obtained by multiplying the principal by the rate by the time; $I = prt$

Example:

Carol invested \$150 at a simple interest rate of 4%. Find the interest she will earn in 2 years.

$I = prt$ ← $p = 150, r = 4\%$ or $0.04, t = 2$
$I = 150 \times 4\% \times 2$
$I = 150 \times 0.04 \times 2$
$I = 12$

So, the interest earned in 2 years is \$12.

161. simplest form :

A fraction is in simplest form when the numerator and denominator have no common factors other than 1.

Example:

$$\frac{6}{18} = \frac{6 \div 6}{18 \div 6} = \frac{1}{3}$$

The simplest form of $\frac{6}{18}$ is $\frac{1}{3}$.

The form of an expression when all like terms are combined

Example:

$$4x + 3x + 2 = 7x + 2 \leftarrow \text{simplest form}$$

162. simplify :

To combine like terms

Example:

Simplify. $n^2 + 4n - 9n + 7 - 5$

$n^2 + 4n - 9n + 7 - 5$	<i>Collect like terms by using the Associative Property.</i>
$n^2 + (4n - 9n) + (7 - 5)$	
$n^2 + (-5n) + 2$	<i>Combine like terms.</i>
$n^2 - 5n + 2$	A

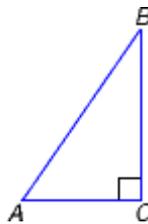
163. simulation :

A model of an experiment that would be too difficult or too time-consuming to actually perform

164. sine (sin) :

In a right triangle, the ratio of the length of the side opposite an angle to the length of the hypotenuse

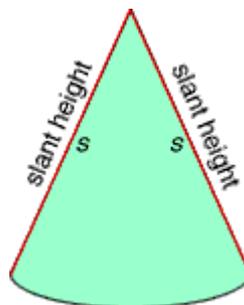
$$\sin A \text{ (sine of } \angle A) = \frac{\text{length of opposite side}}{\text{length of hypotenuse}} = \frac{BC}{AB}$$



165. slant height :

The distance from the base of a cone to its vertex, measured along the lateral surface

Example:

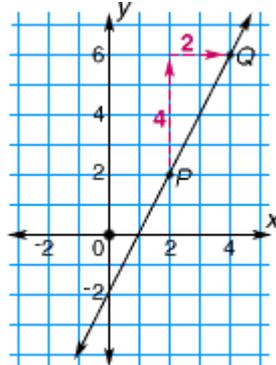


166. slope :

The measure of the steepness of a line; the ratio of vertical change to horizontal change

$$\text{slope} = \frac{\text{vertical change}}{\text{horizontal change}}$$

Example:

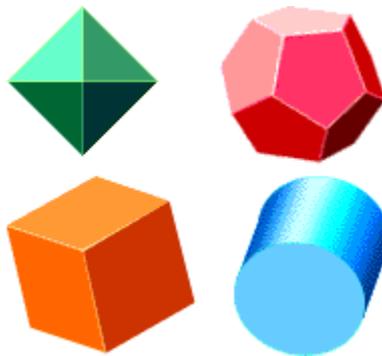


The slope of line PQ is $\frac{4}{2}$, or 2.

167. solid figure :

A three-dimensional figure

Examples:



168. solution :

The value or values that make an equation an inequality, or system of equations true

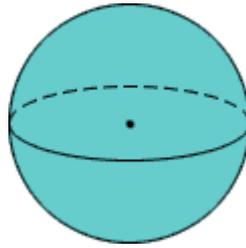
Examples:

$x - 4 = 16$	$x + 3 > 9$
$x - 4 + 4 = 16 + 4$	$x + 3 - 3 > 9 - 3$
$x = 20$	$x > 6$
20 is the solution.	Any number greater than 6 is a solution.

169. sphere :

A solid figure with all points the same distance from the center

Example:



170. spiral :

A curve traced by a point turning around and away from a fixed point

Examples:



equiangular



Archimedean

171. spreadsheet :

A computer program that organizes information in rows and columns and does calculations with numbers and formulas

Example:

Year	Principal	Interest Rate	Compound Interest	Total Amount
1	\$100.00	0.08	\$8.00	\$108.00
2	\$108.00	0.08	\$8.64	\$116.64
3	\$116.64	0.08	\$9.33	\$125.97
4	\$125.97	0.08	\$10.08	\$136.05
5	\$136.05	0.08	\$10.88	\$146.93

172. square root :

One of the two equal factors of a number

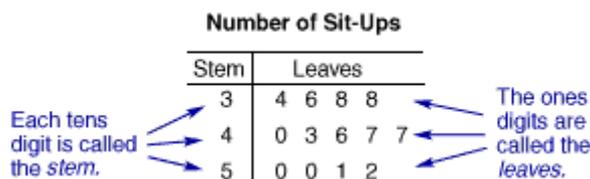
Example:

6 is the square root of 36 because $6^2 = 36$.

173. stem-and-leaf plot :

A method of organizing intervals or groups of data

Example:



Key: 3 | 6 = 36

174. substitute :

To replace a variable with a value

Example:

Which of the values 12, 20, and 21 are solutions of $x - 4 = 16$?

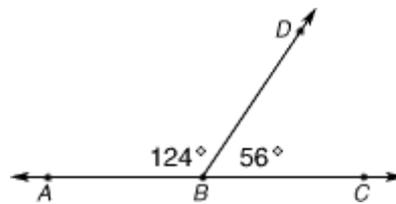
Substitute each of the values for x in the equation.

<p>Use $x = 12$.</p> $x - 4 = 16$ $12 - 4 = 16$ $8 \neq 16$ <i>not a solution</i>	<p>Use $x = 20$.</p> $x - 4 = 16$ $20 - 4 = 16$ $16 = 16$ <i>solution</i>	<p>Use $x = 21$.</p> $x - 4 = 16$ $21 - 4 = 16$ $17 \neq 16$ <i>not a solution</i>
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175. supplementary angles :

Two angles whose measures have a sum of 180°

Example:

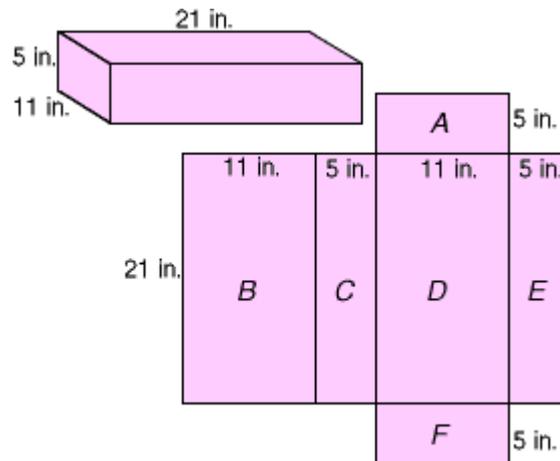


$$m\angle ABD + m\angle DBC = 124^\circ + 56^\circ = 180^\circ$$

176. surface area :

The sum of the areas of all the faces, or surfaces, of a solid figure

Example:



$$\text{Area of face A} = 11 \times 5 = 55$$

$$\text{Area of face B} = 21 \times 11 = 231$$

$$\text{Area of face C} = 21 \times 5 = 105$$

$$\text{Area of face D} = 21 \times 11 = 231$$

$$\text{Area of face E} = 21 \times 5 = 105$$

$$\text{Area of face F} = 11 \times 5 = 55$$

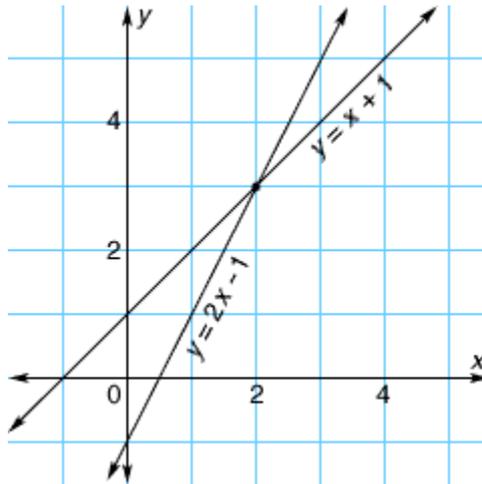
$$55 + 231 + 105 + 231 + 105 + 55 = 782$$

So, the surface area is 782 in^2 .

177. system of equations :

Two or more linear equations graphed in the same coordinate plane

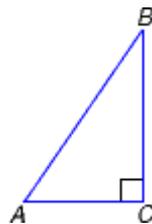
Example:



178. tangent (tan) :

In a right triangle, the ratio of the length of the side opposite an angle to the length of the side adjacent to the angle

$$\tan A \text{ (tangent of } \angle A) = \frac{\text{length of opposite side}}{\text{length of adjacent side}} = \frac{BC}{AC}$$



179. term :

A real number, a variable, or a product of real numbers and variables

Example:

In the expression $5x + 4$,
the terms are $5x$ and 4 .

A number in a sequence

Example:

$3, 6, 12, 24, \dots$

6 is a term in the sequence

One of the numbers in a ratio

Example:

$\frac{1}{64}$ ← first term
 $\frac{1}{64}$ ← second term

180. terminating decimal :

A decimal that ends; a decimal for which the division operation results in a remainder of zero

Examples:

$$\frac{1}{2} = 0.5$$

$$\begin{array}{r} 0.625 \\ 8 \overline{) 5.000} \\ \underline{- 48} \\ 20 \\ \underline{- 16} \\ 40 \\ \underline{- 40} \\ 0 \end{array}$$

181. third quartile :

The median of the upper half of a set of data

Example:

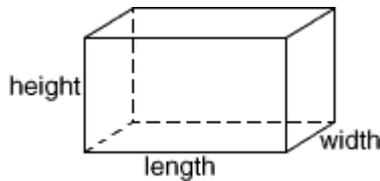
2, 3, 4, 5, 5, 6, 7, 8, 8, 8, 9, 11

The third quartile is 8.

182. three-dimensional :

Having length, width, and height

Example:



The rectangular prism is three-dimensional.

183. transformation :

A change in size, shape, or position of a geometric figure; translations, reflections, rotations, and dilations are transformations.

Example:

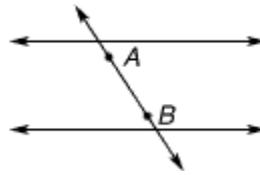


184. transversal :

A line that intersects two or more lines

Example:

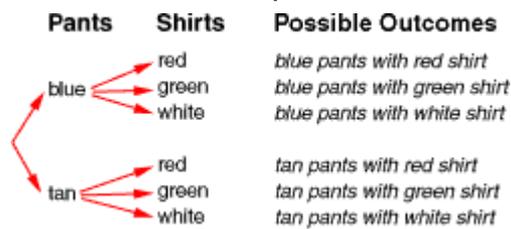
Line *AB* is a transversal.



185. tree diagram :

A branching diagram which shows all the possible combinations or outcomes

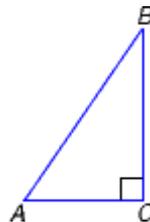
Example:



186. trigonometric ratios :

Ratios which compare the lengths of the sides of a right triangle; the common ratios are tangent, sine, and cosine.

Example:



$$\tan A \text{ (tangent of } \angle A) = \frac{\text{length of opposite side}}{\text{length of adjacent side}} = \frac{BC}{AC}$$

$$\sin A \text{ (sine of } \angle A) = \frac{\text{length of opposite side}}{\text{length of hypotenuse}} = \frac{BC}{AB}$$

$$\cos A \text{ (cosine of } \angle A) = \frac{\text{length of adjacent side}}{\text{length of hypotenuse}} = \frac{AC}{AB}$$

187. trinomial :

The sum of three monomials

Example:

$$3x + 5y + 7$$

188. unit price :

A unit rate used to compare prices

Examples:

$$\frac{\$2.24}{64 \text{ oz}} = \frac{\$0.035}{1 \text{ oz}} \leftarrow \text{unit price}$$

$$\frac{\$0.79}{20 \text{ oz}} = \frac{\$0.0395}{1 \text{ oz}} \leftarrow \text{unit price}$$

189. unit rate :

A rate in which the second term is 1

Example:

$$\text{rate: } \frac{\text{price}}{\text{number of ounces}} \rightarrow \frac{\$3.28}{20 \text{ oz}}$$

$$\text{unit rate: } \frac{\$3.28}{20 \text{ oz}} = \frac{\$3.28 \div 20}{20 \text{ oz} \div 20} = \frac{\$0.16}{1 \text{ oz}}$$

190. upper extreme :

The greatest number in a set of data

Example:

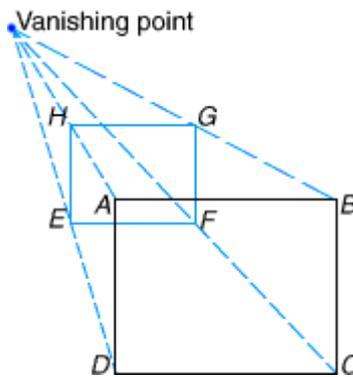
2, 3, 4, 5, 5, 6, 7, 8, 8, 8, 9, **11**

The upper extreme is 11.

191. vanishing point :

In a perspective drawing, a point where lines drawn from each vertex meet

Example:



192. variable :

A letter used to represent one or more numbers in an expression, equation, or inequality

Examples:

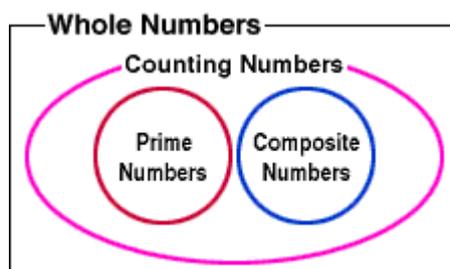
$$5a \quad 2x = 8 \quad 3y + 4 \neq 10$$

a, x, and y are variables.

193. venn diagram :

A diagram that is used to show relationships between sets

Example:



194. vertex :

A point where two or more rays meet, where sides of a polygon meet, or where edges of a polyhedron meet; the top point of a cone or pyramid; in a network, a point that represents an object

Examples:



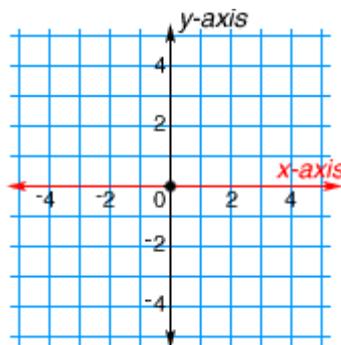
195. withholding tax :

A deduction from a person's earnings as an advance payment on income tax

196. x-axis :

The horizontal axis on the coordinate plane

Example:



197. x-coordinate :

The first number in an ordered pair; tells whether to move right or left along the x-axis of the coordinate plane

Example:

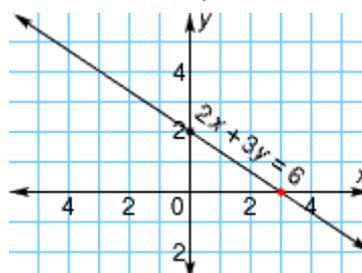
(3, 2)

3 is the x-coordinate.

198. x-intercept :

The x-coordinate of the point where the graph of a line crosses the x-axis

Example:

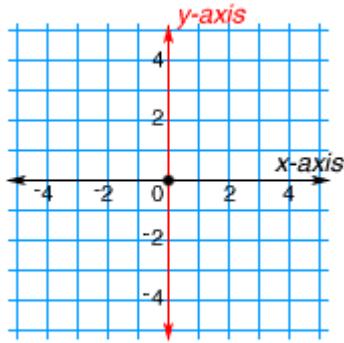


The x-intercept is 3.

199. y-axis :

The vertical axis on the coordinate plane

Example:



200. y-coordinate :

The second number in an ordered pair; tells whether to move up or down along the y -axis of the coordinate plane

Example:

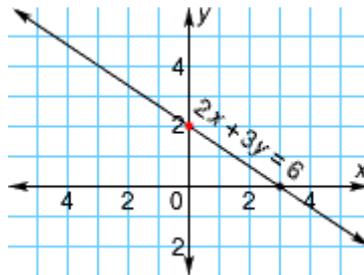
$(3, 2)$

2 is the y -coordinate.

201. y-intercept :

The y -coordinate of the point where the graph of a line crosses the y -axis

Example:



The y -intercept is 2.