

Vocabulary Cards and Word Walls

Revised: August 29, 2011

Important Notes for Teachers:

- The vocabulary cards in this file match the Common Core, the math curriculum adopted by the Utah State Board of Education, August 2010.
- The cards are arranged alphabetically.
- Each card has three sections.
 - Section 1 is only the word. This is to be used as a visual aid in spelling and pronunciation. It is also used when students are writing their own “kid-friendly” definition and drawing their own graphic.
 - Section 2 has the word and a graphic. This graphic is available to be used as a model by the teacher.
 - Section 3 has the word, a graphic, and a definition. This is to be used for the Word Wall in the classroom. For more information on using a Word Wall for Daily Review – see “Vocabulary – Word Wall Ideas” on this website.
- These cards are designed to help all students with math content vocabulary, including ELL, Gifted and Talented, Special Education, and Regular Education students.

For possible additions or corrections to the vocabulary cards, please contact the Granite School District Math Department at 385-646-4239.

Bibliography of Definition Sources:

Algebra to Go, Great Source, 2000. ISBN 0-669-46151-8

Math on Call, Great Source, 2004. ISBN-13: 978-0-669-50819-2

Math at Hand, Great Source, 1999. ISBN 0-669-46922

Math to Know, Great Source, 2000. ISBN 0-669-47153-4

Illustrated Dictionary of Math, Usborne Publishing Ltd., 2003. ISBN 0-7945-0662-3

Math Dictionary, Eula Ewing Monroe, Boyds Mills Press, 2006. ISBN-13: 978-1-59078-413-6

Student Reference Books, Everyday Mathematics, 2007.

Houghton-Mifflin eGlossary, <http://www.eduplace.com>

Interactive Math Dictionary, <http://www.amathsdictionaryforkids.com/>

non-zero divisor

non-zero
divisor

$$8 \overline{)578}$$

non-zero divisor

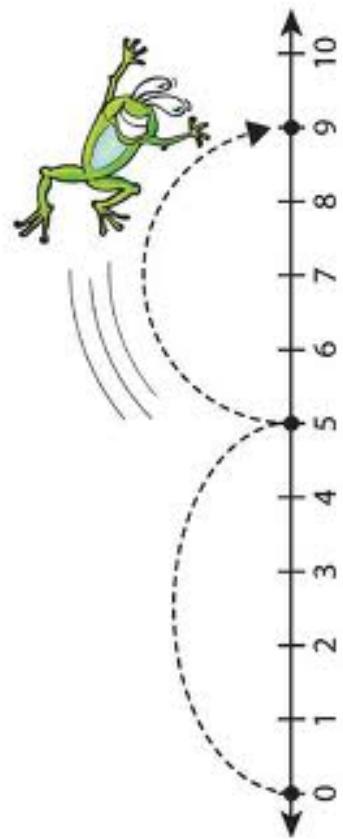
$$8 \overline{)578}$$

non-zero divisor

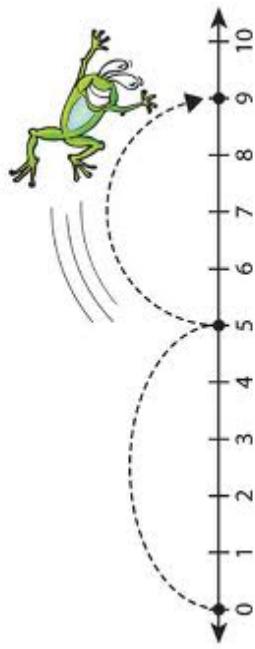
A quantity, not including zero, by which another quantity, the dividend, is to be divided.

number line

number line



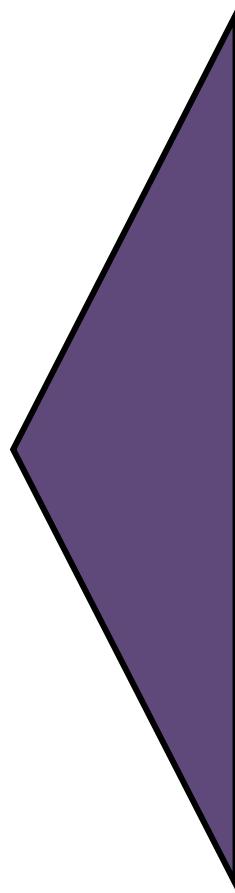
number
line



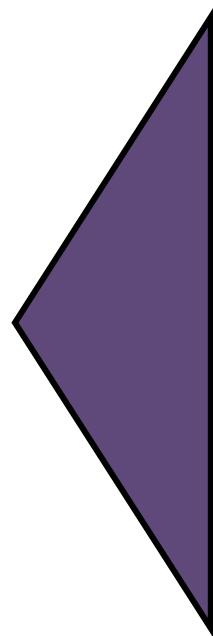
A diagram that represents numbers as points on a line.

obtuse triangle

obtuse
triangle



obtuse
triangle



A triangle that contains one angle with a measure greater than 90° (obtuse angle) and two acute angles.

Ordered pair

Ordered
pair

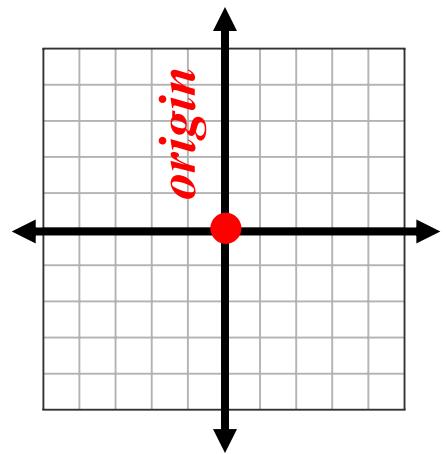
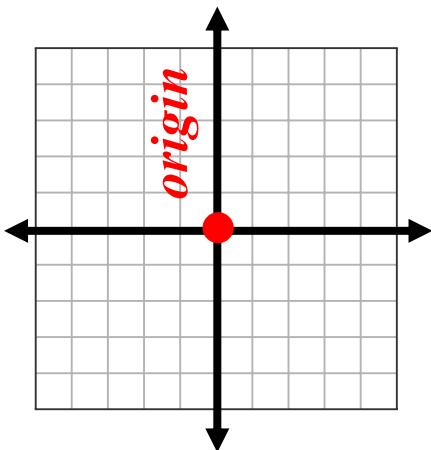
($-5, 2$)
 (x, y)

A pair of numbers that gives the coordinates of a point on a grid in this order (horizontal coordinate, vertical coordinate). Also known as a coordinate pair.

Ordered
pair

Origin

Origin



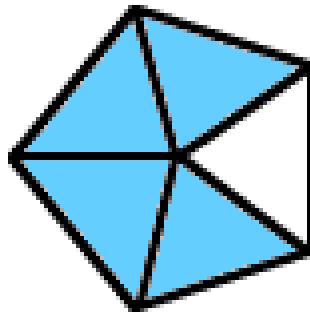
The intersection of the x - and y -axes in a coordinate plane, described by the ordered pair $(0, 0)$.

Origin

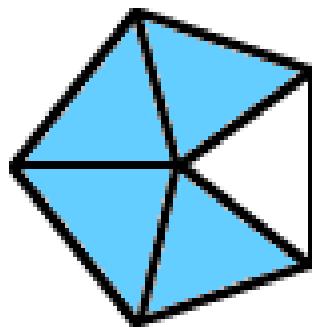
percent

percent

80% of
the
pentagon
is shaded.



80% of
the
pentagon
is
shaded.



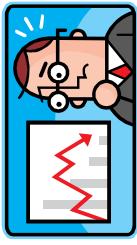
percent

A special ratio that
compares a number to 100
using the symbol %.

percent decrease

percent decrease

$$\text{percent decrease} = \frac{\text{new amount} - \text{original amount}}{\text{original amount}} \cdot 100$$

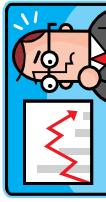


Example: Suppose you buy stock in company A at a price of \$1.25 per share in January of a given year. Suppose that by July it has fallen to \$1.00 per share in the same time period. What is the percent decrease?

$$\text{percent decrease} = \frac{\$1.00 - \$1.25}{\$1.25} \cdot 100 = -20\%$$

Also expressed a percent decrease 20%.

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Percent decrease is a measure of percent change, which is the extent to which a variable loses value. It is found by comparing the initial (or before) and final (or after) quantities according to a specific formula. It is assumed that both the initial and the final quantities are positive (larger than 0).

percent error

percent error

$$\text{percent error} = \frac{\text{predicted value} - \text{actual value}}{\text{actual value}} \cdot 100$$



Example: Patty had casually recorded her grades for the nine weeks in her notebook. She concluded she had 250 points out of 300 for the grading period. However, her math teacher determined she had 225 points out of 300 and awarded her a "C" for the grading period. What was her percent error?

$$\text{percent error} = \frac{250 - 225}{225} \cdot 100 = 11.1\%$$

$$\text{percent error} = \frac{\text{predicted value} - \text{actual value}}{\text{actual value}} \cdot 100$$

percent error

Example: Patty had casually recorded her grades for the nine weeks in her notebook. She concluded she had 250 points out of 300 for the grading period. However, her math teacher determined she had 225 points out of 300 and awarded her a "C" for the grading period. What was her percent error?



Percent error is the difference between a predicted value and the actual value. Percent errors tell you how close or how far you came to the actual answer.

Note: If your answer is negative it means you were short of the actual answer.

$$\text{percent error} = \frac{250 - 225}{225} \cdot 100 = 11.1\%$$

percent increase

percent increase

$$\text{percent increase} = \frac{\text{new amount} - \text{original amount}}{\text{original amount}} \cdot 100$$



Example: Suppose apples used to sell for seventy-five cents a pound, you see that it's been marked up to eighty-one cents a pound. What is the percent increase?

$$\text{percent increase} = \frac{\$0.81 - \$0.75}{\$0.75} \cdot 100 = 8\%$$

Also expressed as an 8% percent increase in price per pound.

Percent increase is a measure of percent change, which is the extent to which a variable gains value. It is found by comparing the initial (or before) and final (or after) quantities according to a specific formula. It is assumed that both the initial and the final quantities are positive (larger than 0).



$$\text{percent increase} = \frac{\text{new amount} - \text{original amount}}{\text{original amount}} \cdot 100$$

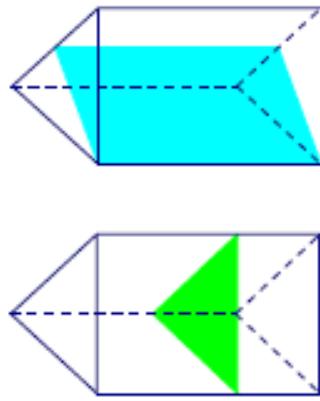
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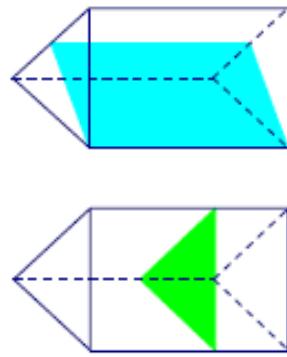
Also expressed as an 8% percent increase in price per pound.

plane sections

plane Sections



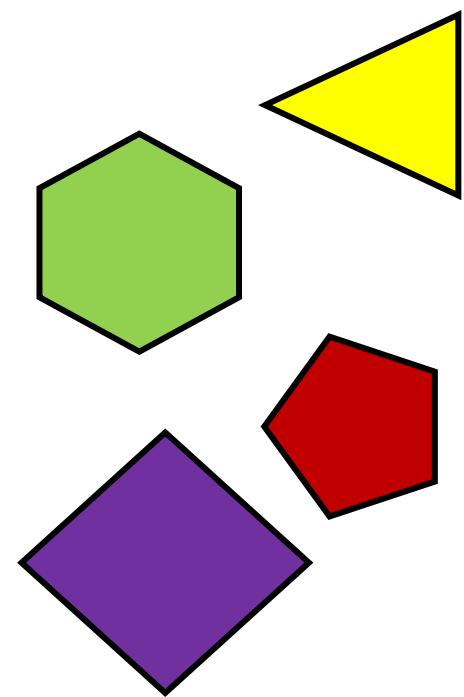
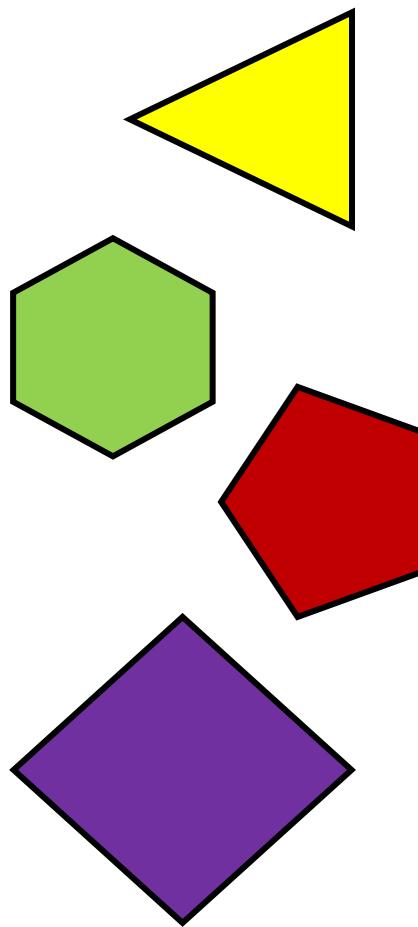
plane
sections



The area created by a plane cutting through a solid.

polygon

polygon

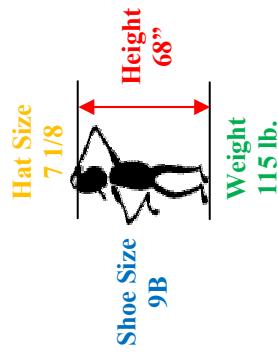


A closed figure formed from line segments that meet only at their endpoints.

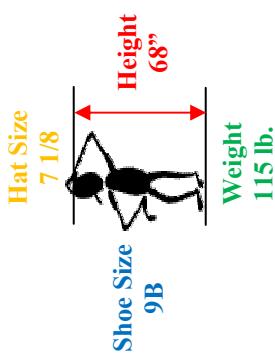
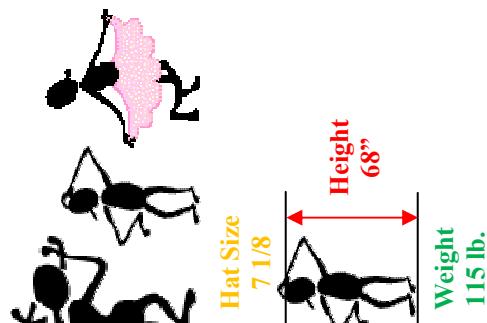
polygon

population

population



The entire collection of items that is the focus of concern. A population can be of any size and while the items need not be uniform, the items must share at least one measurable feature.



population

prediction

prediction



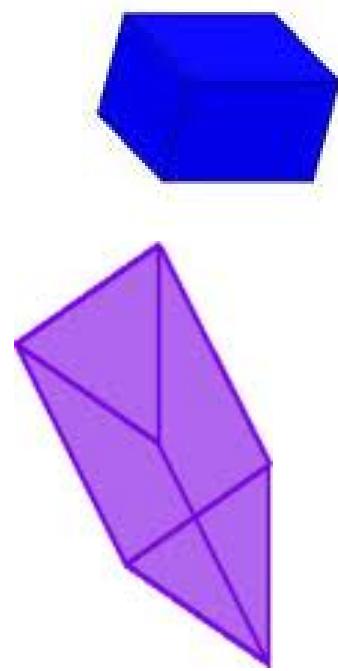
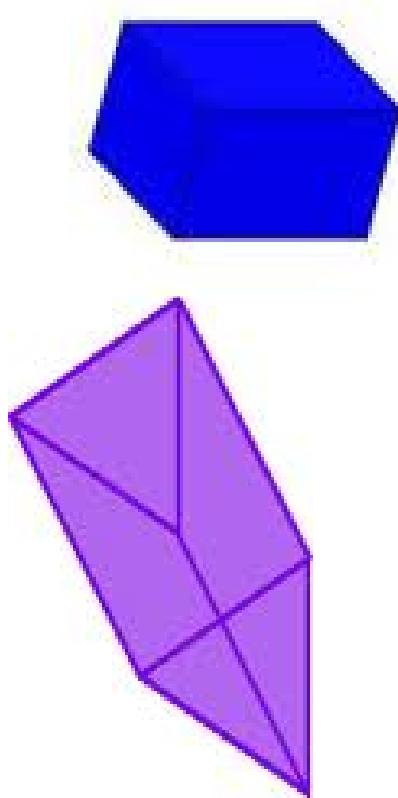
To state in advance on the basis of observation, experience, or scientific reason.

prediction

prism

prism

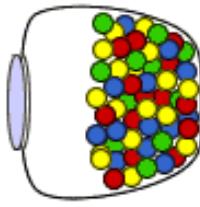
prism



A 3-dimensional figure that has two congruent and parallel faces that are polygons. The remaining faces are parallelograms.

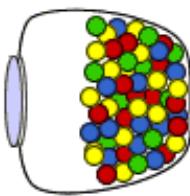
probability

Example: A glass jar contains 6 red, 5 green, 8 blue and 3 yellow marbles. If a single marble is chosen at random from the jar, what is the probability of choosing a red marble?



$$P(\text{red}) = \frac{\# \text{ of ways to choose red}}{\text{total } \# \text{ of marbles}} = \frac{6}{22} = \frac{3}{11}$$

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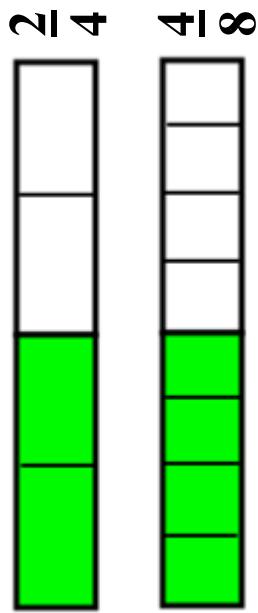
$$P(\text{red}) = \frac{\# \text{ of ways to choose red}}{\text{total } \# \text{ of marbles}} = \frac{6}{22} = \frac{3}{11}$$

The chance that a particular outcome will occur, measured as a ratio of the total possible outcomes.

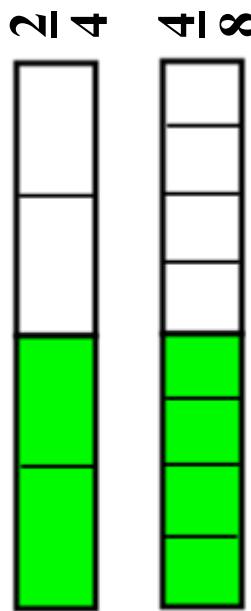
probability

proportion

proportion



$$\frac{2}{4} = \frac{4}{8}$$



$$\frac{2}{4} = \frac{4}{8}$$

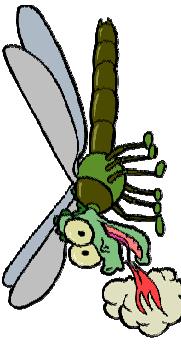
An equation showing
that two ratios are
equivalent.

proportional relationship

Example: A dragonfly travels 25 meters per second. At this speed, how long would it take for the dragonfly to travel 375 meters?

There are three quantities in this example: distance traveled, time elapsed, and the speed with which the dragonfly travels. We could use the letter d stand for the distance the dragonfly travels, t stand for the time that has elapsed, and r stand for the speed or rate in which it travels. Thus, $d = rt$.

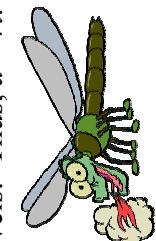
$$\begin{aligned} 375 &= 25 \cdot t \\ \frac{375}{25} &= t \\ t &= 15 \text{ sec} \end{aligned}$$



proportional relationship

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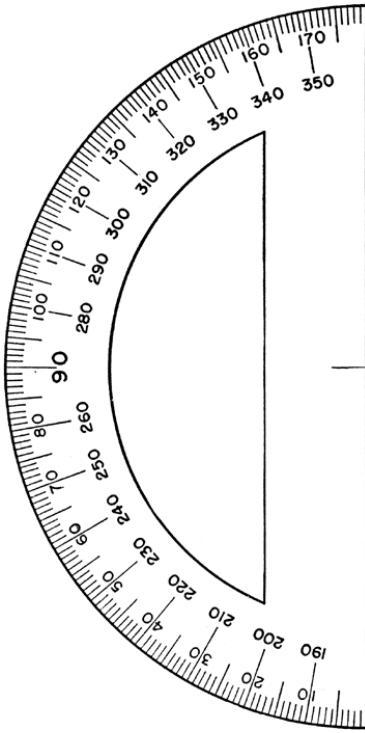
proportional relationship

A proportional relationship is a

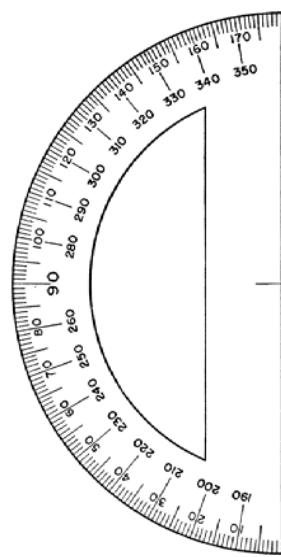
relationship between two variable quantities x and y , where y is a constant multiple (k) of x . This can be expressed in the simple equation, $y = kx$.

protractor

protractor

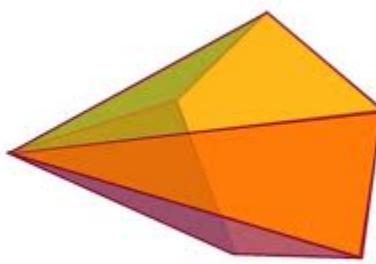
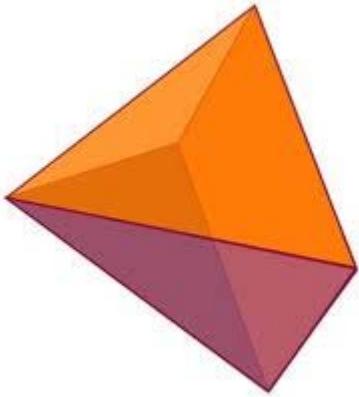


protractor

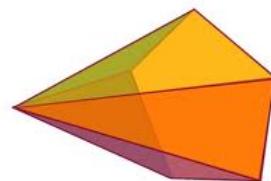
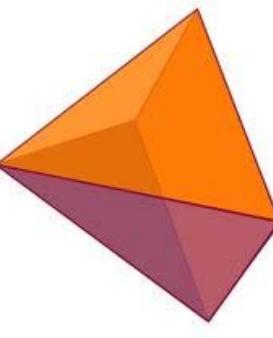


A tool used to measure and draw angles.

pyramid



pyramid

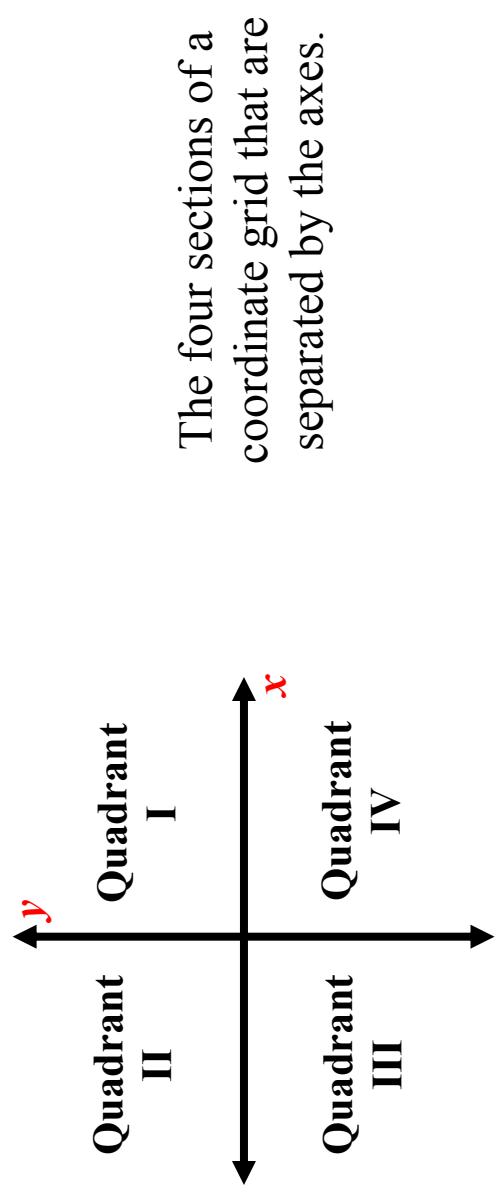
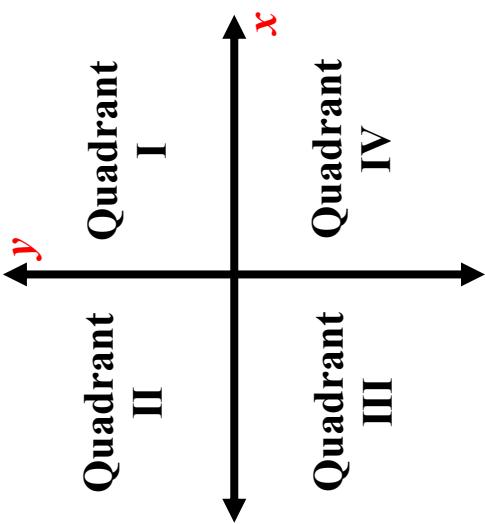


pyramid

A polyhedron whose base is a polygon and whose other faces are triangles that share a common vertex.

quadrants

quadrants

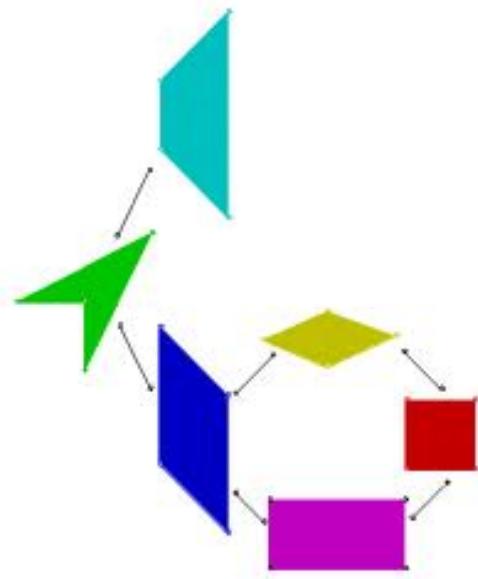
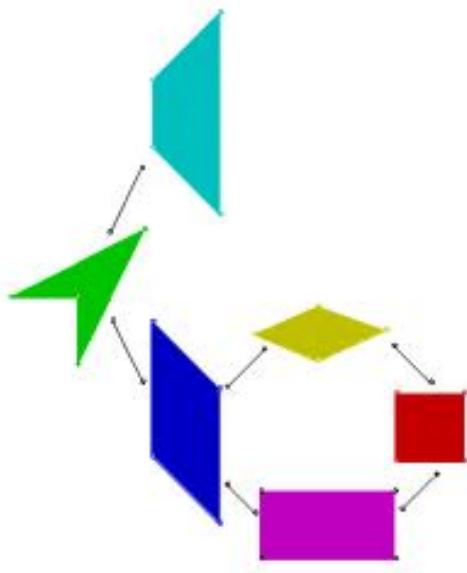


The four sections of a coordinate grid that are separated by the axes.

quadrants

quadrilateral

quadrilateral



quadrilateral

A four-sided polygon.

quotient

quotient

$$\begin{array}{r} \xrightarrow{\hspace{1cm}} 15 \text{ R } 2 \\ 9 \overline{)137} \end{array}$$

quotient

quotient

quotient

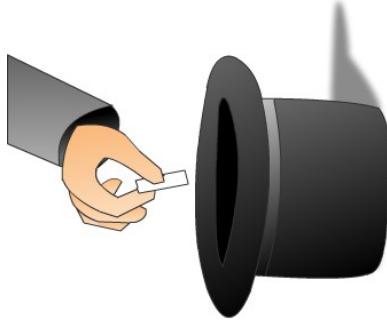
$$\begin{array}{r} \xrightarrow{\hspace{1cm}} 15 \text{ R } 2 \\ 9 \overline{)137} \end{array}$$

The result of the division
of one quantity by
another.

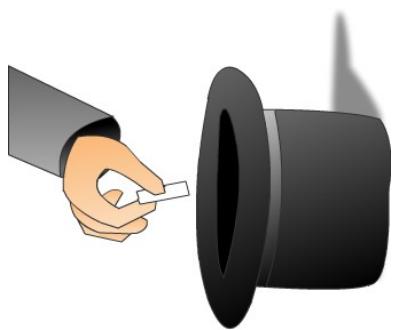
random Sample

random
sample

Draw a number out of the hat!



Draw a number out of the hat!



A selection that is
chosen randomly (purely
by chance, with no
predictability.)

rate

rate

rate



The car was traveling 65 miles per hour on the freeway.

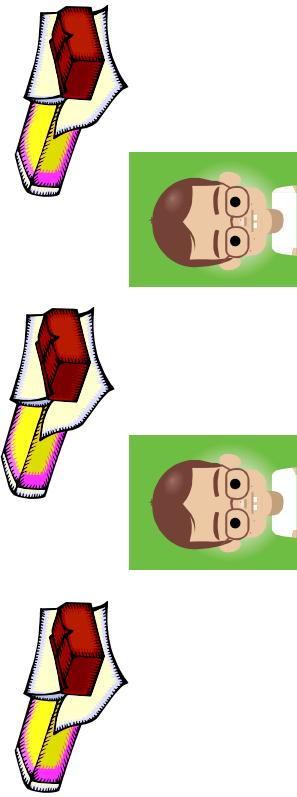


The car was traveling 65 miles per hour on the freeway.

A ratio comparing two different units.

ratio

ratio



The ratio of chocolate bars to boys is
3:2.



The ratio of chocolate bars to
boys is **3:2.**

A comparison of two
numbers using division.

rational coefficient

rational
coefficient

$$\frac{2}{3}x + 7$$

rational coefficient

rational
coefficient

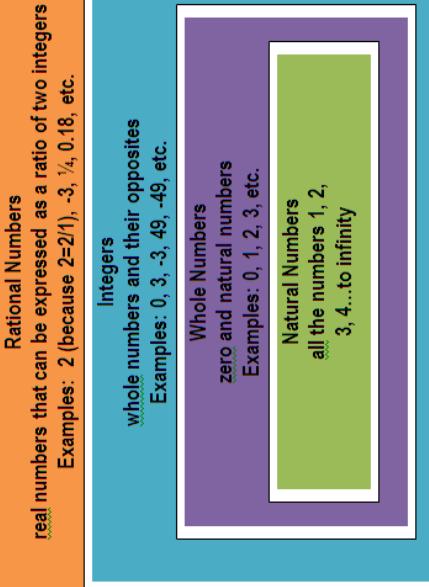
$$\frac{2}{3}x + 7$$

rational coefficient

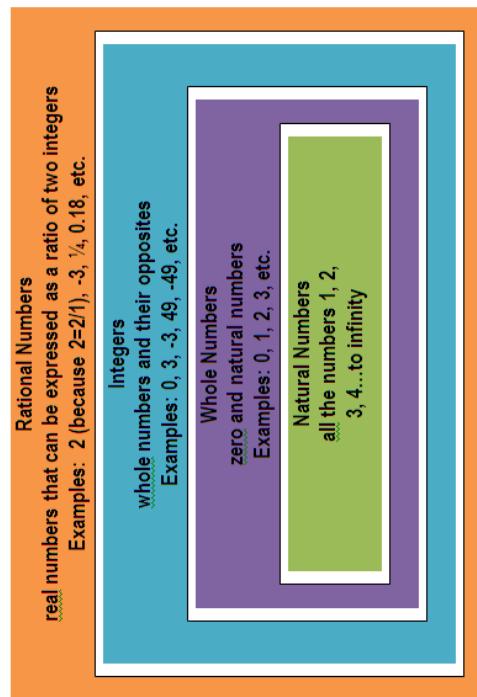
A rational number
which multiplies a
variable.

rational number

rational number



rational number



A number that can be expressed as a ratio of two integers.

relative frequency

relative frequency

Example: Suppose we toss a coin 50 times and have 27 heads and 23 tails. The relative frequency of heads is:

$$\frac{27}{50} = 54\%$$



The ratio of the actual number of favorable events to the total possible number of events; often taken as an estimate of probability.



Example: Suppose we toss a coin 50 times and have 27 heads and 23 tails. The relative frequency of heads is:

$$\frac{27}{50} = 54\%$$

relative frequency

repeating decimal

repeating
decimal

$$\frac{1}{3} = 0.\underset{\text{repeating}}{333333333333}$$
$$\frac{1}{7} = 0.\underset{\text{repeating}}{142857142857}$$

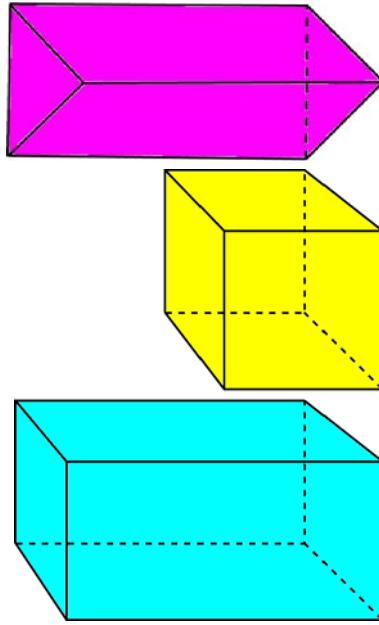
repeating
decimal

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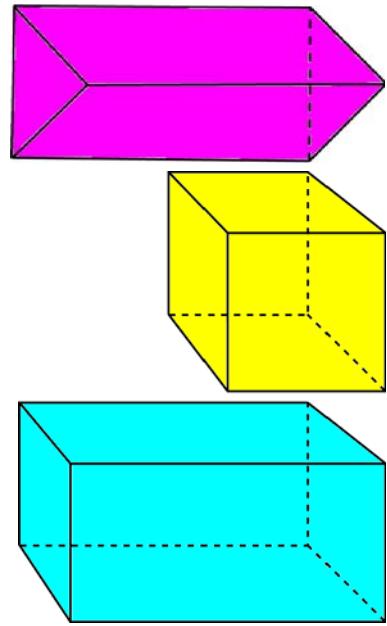
A decimal which has
repeating digits or a
repeating pattern of
digits.

right prism

right
prism

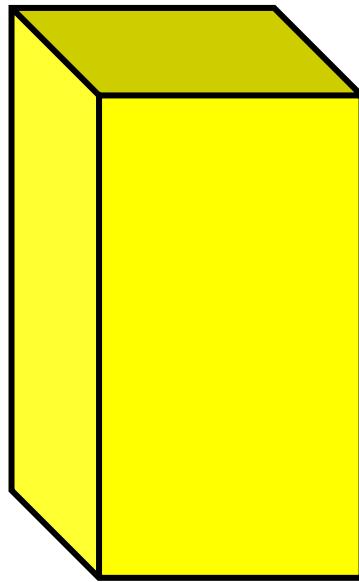


right
prism



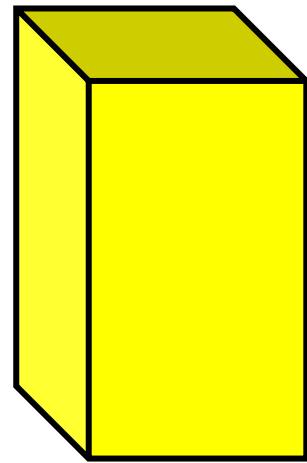
A prism where the lateral faces are at right angles to the base.

right rectangular prism



**right rectangular
prism**

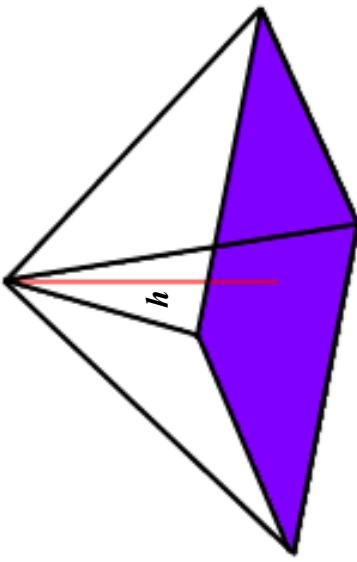
**right
rectangular
prism**



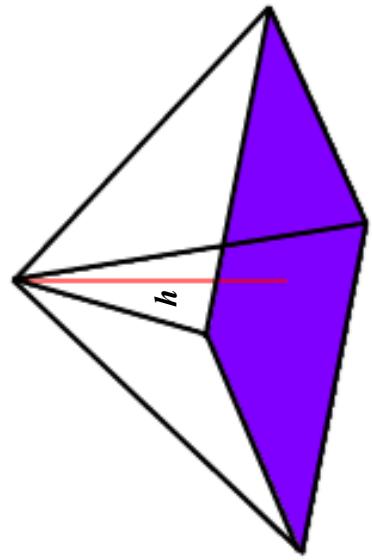
A prism with six rectangular faces where the lateral edge is perpendicular to the plane of the base.

right rectangular pyramid

right rectangular
pyramid



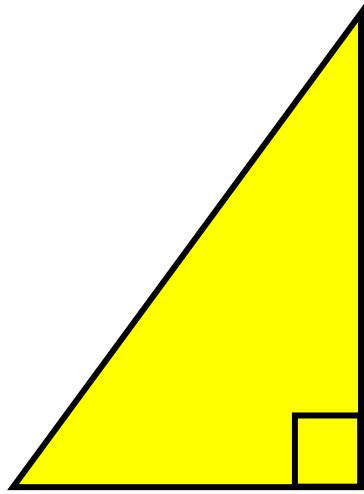
right
rectangular
pyramid



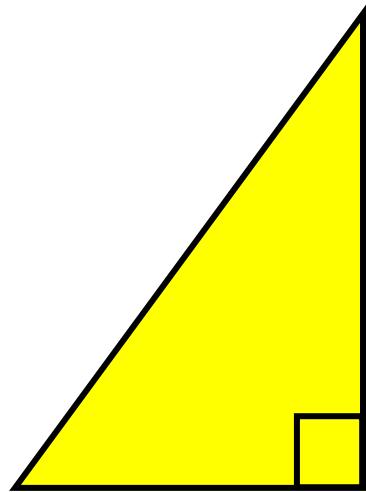
A pyramid that has its apex aligned directly above the center of its rectangular base.

right triangle

right
triangle



right
triangle



A triangle that has one
 90° angle.

Sample Space

Sample space



sample space: {head, tail}



sample space: {1, 2, 3, 4, 5, 6}

Sample space



sample space: {head, tail}



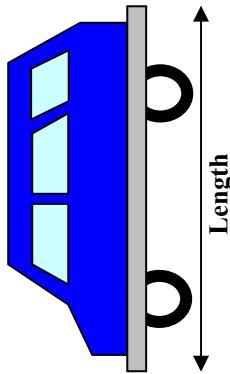
sample space: {1, 2, 3, 4, 5, 6}

The set of all possible outcomes of a random process.

scale drawing

scale drawing

Since it is not always possible to draw on paper the actual size of real-life objects such as the real size of a car, an airplane, we need scale drawings to represent the size like the one you see below of a van.



In real-life, the length of this van may measure 240 inches. However, the length of the van above is 2 inches. You can write this scale factor as 1:20 or 1/20 or 1 to 20.

Since it is not always possible to draw on paper the actual size of real-life objects such as the real size of a car, an airplane, we need scale drawings to represent the size like the one you see below of a van.



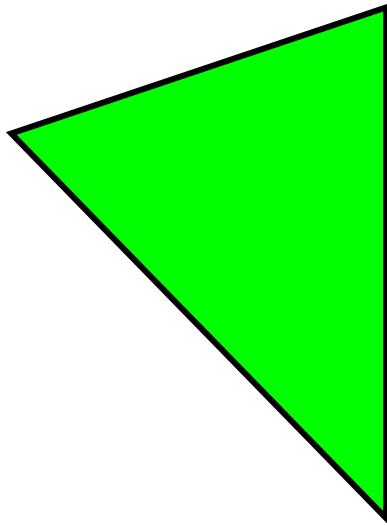
In real-life, the length of this van may measure 240 inches. However, the length of the van above is 2 inches. You can write this scale factor as 1:20 or 1/20 or 1 to 20.

scale drawing

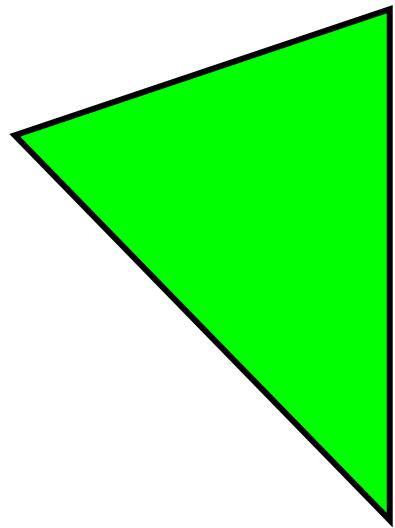
A drawing of an object or structure showing all parts in the same proportion of their true size.

scalene triangle

**scalene
triangle**



**scalene
triangle**



A triangle that has no
congruent sides.

Signed number

Signed
number

-5
+8

-23
+45

-5
+8
-23
+45

Positive or negative
number.

Simple interest

Simple interest

$$I = P \cdot r \cdot t$$

$$\text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time}$$

'Interest' is the total amount of interest paid.

'Principal' is the amount lent or borrowed.

'Rate' is the percentage charged as interest each year.

'Time' is the time in years of the loan.

$$I = P \cdot r \cdot t$$

$$\text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time}$$

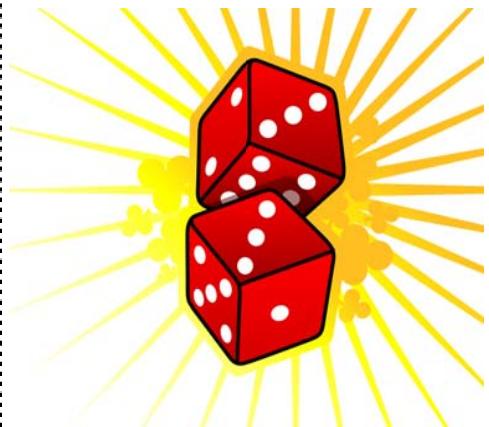
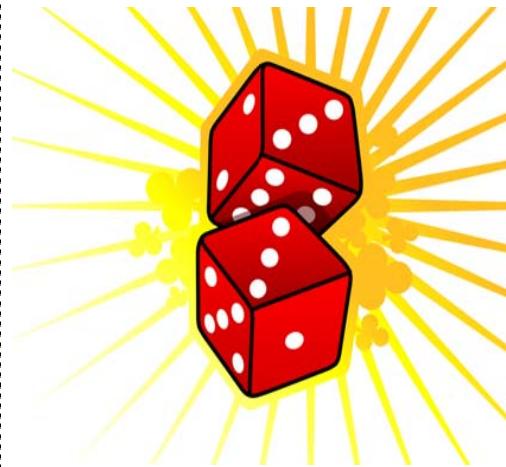
A quick method for calculating the interest charge on a loan.

'Interest' is the total amount of interest paid.
'Principal' is the amount lent or borrowed.
'Rate' is the percentage charged as interest each year.
'Time' is the time in years of the loan.

Simple interest

Simulation

Simulation



simulation

Carrying out a simple experiment to collect data.

Solution Set

Solution Set

The solution set of the equation

$$3x + 2 = 5 \text{ is } \{1\}.$$

The solution set of the equation

$$3x + 2 = 3x + 2 \text{ is } (-\infty, \infty).$$

Solution Set

The solution set of the equation

$$3x + 2 = 5 \text{ is } \{1\}.$$

The solution set of the equation

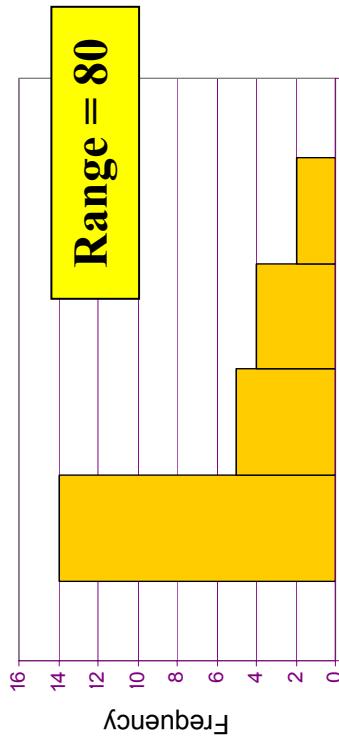
$$3x + 2 = 3x + 2 \text{ is } (-\infty, \infty).$$

A set of values that satisfy a given set of equations or inequalities.

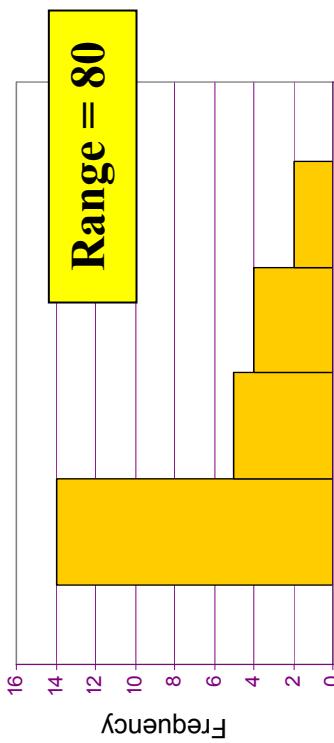
Spread

Spread

Number of Weeks on the Top 200 Chart



Number of Weeks on the Top 200 Chart

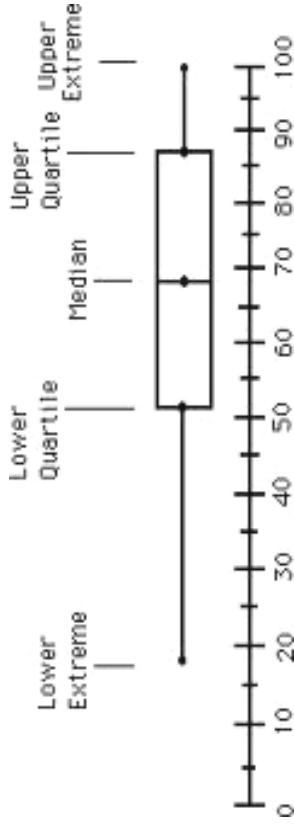


A measure of how much a collection of data is spread out. Commonly used types include range and quartiles. (Also known as measures of variation or dispersion.)

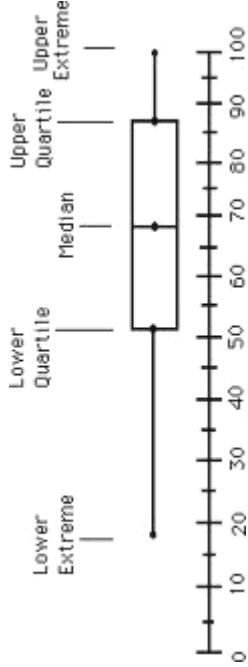
Number of Weeks

Statistical variability

Statistical variability



Statistical variability



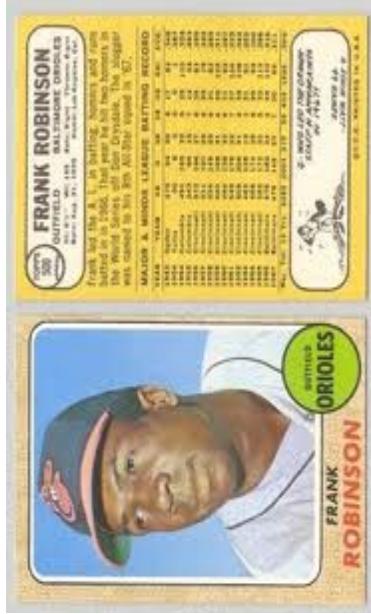
A variability or spread in a variable or a probability distribution. Common examples of measures of statistical dispersion are the variance, standard deviation, and interquartile range.

Statistics

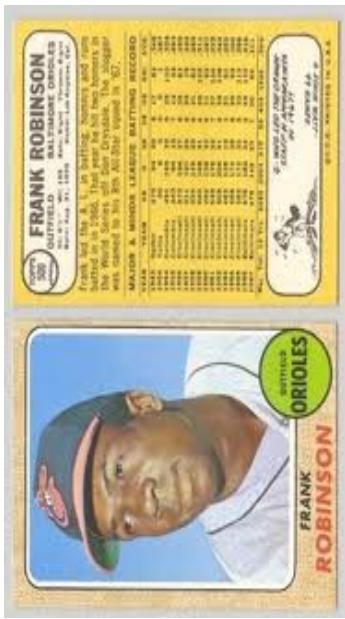
Statistics

Statistics

This baseball card shows statistics for a famous baseball player.



This baseball card shows statistics for a famous baseball player.



The science of collecting, organizing, representing, and interpreting data.

Substitution

Substitution

If x is equal to 9, then ...

$$8x + 4 = ?$$

$$8(9) + 4 = 76$$

If x is equal to 9, then ...

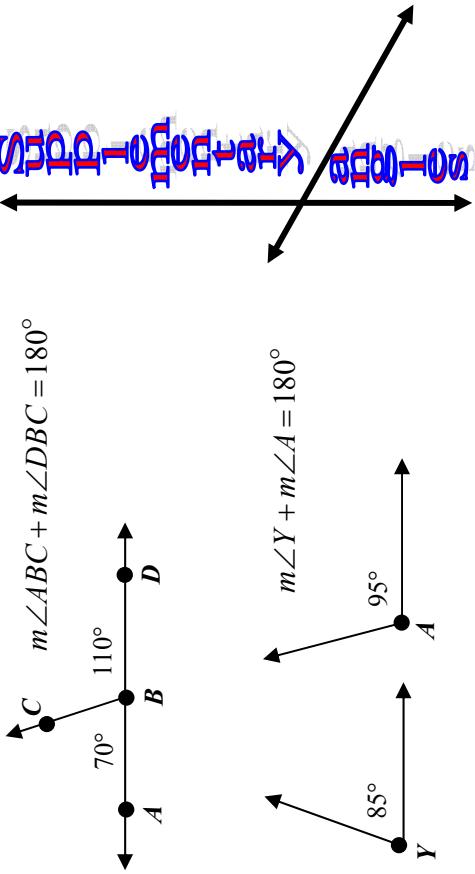
$$8x + 4 = ?$$

$$8(9) + 4 = 76$$

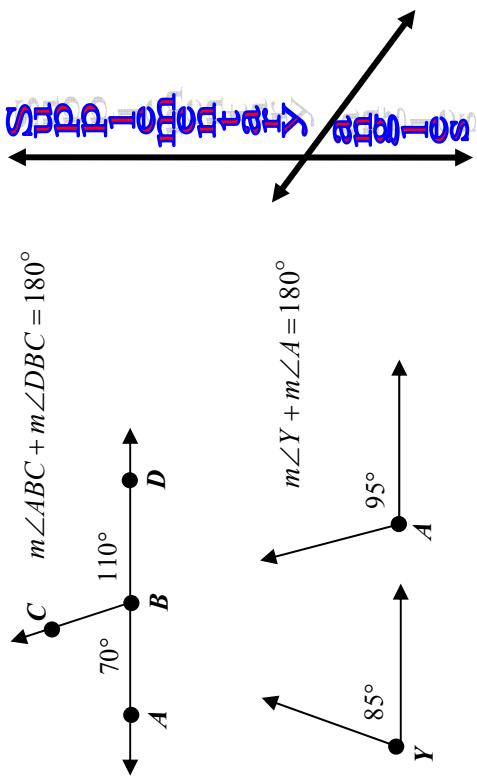
The replacement of the letters in an algebraic expression with known values.

Supplementary angles

Supplementary angles



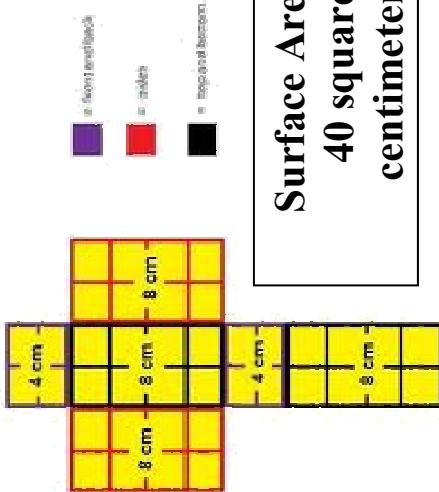
If the sum of the measures of two angles is 180° , then the two angles are **supplementary**. If two angles form a straight line, then they are supplementary.



Supplementary angles

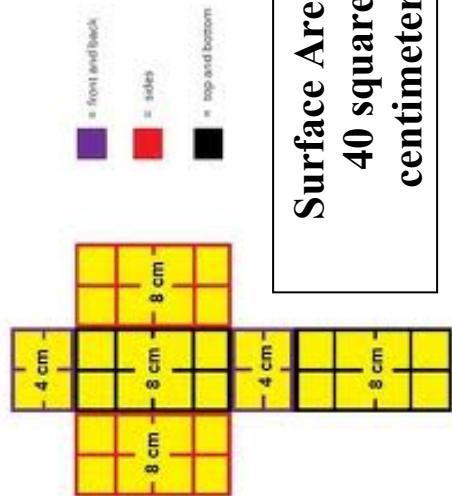
Surface area

surface
area



Surface Area =
40 square
centimeters

The total area of the faces (including the bases) and curved surfaces of a solid figure.

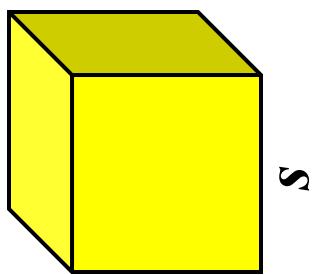


Surface Area =
40 square
centimeters

surface
area

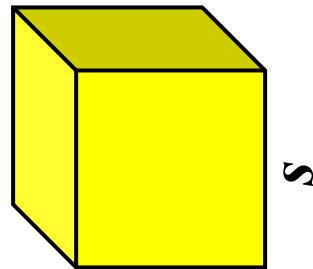
Surface area (cube)

Surface area (cube)



s = length of base

$$SA = 6s^2$$



s = length of side

$$SA = 6s^2$$

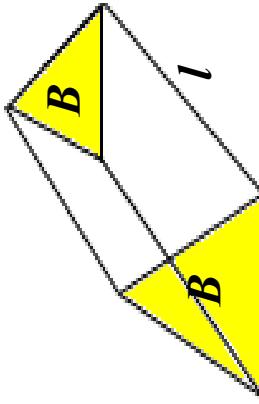
Surface Area of Cube:

$$\text{Surface Area} = 6 \cdot (\text{length of side})^2$$

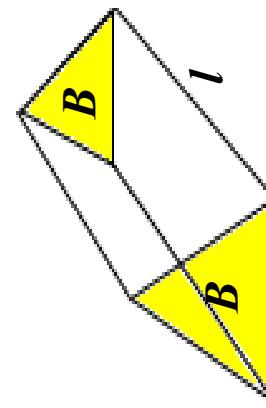
surface area (cube)

Surface area (right prism)

Surface area (right prism)



$$\begin{aligned} \text{SA} &= \text{lateral area} + \text{area of two ends} \\ (\text{Lateral Area}) &= (\text{perimeter of shape } B) \cdot l \\ \text{SA} &= (\text{perimeter of shape } B) \cdot l + 2 \cdot (\text{Area of shape } B) \end{aligned}$$

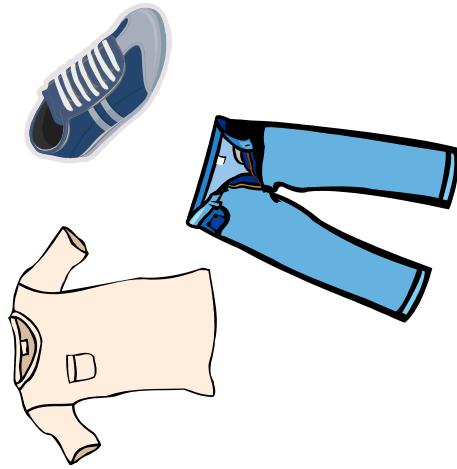


$$\begin{aligned} \text{Surface Area of Right Prism:} \\ \text{Surface Area} = \\ \text{lateral area} + \text{area of two ends} \\ \\ \text{SA} &= \text{lateral area} + \text{area of two ends} \\ (\text{Lateral Area}) &= (\text{perimeter of shape } B) \cdot l \\ \text{SA} &= (\text{perimeter of shape } B) \cdot l + 2 \cdot (\text{Area of shape } B) \end{aligned}$$

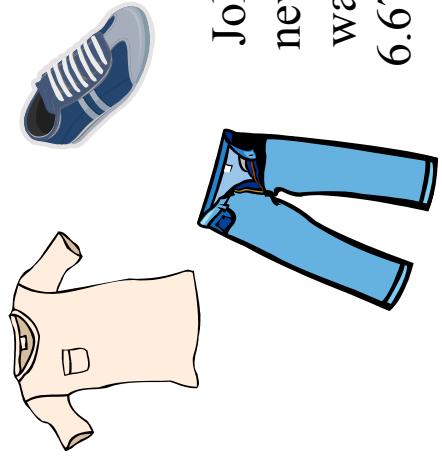
tax

tax

tax



John bought a new outfit and was charged a 6.67% sales tax.



A fee charged by a government on a product, income, or activity.

John bought a new outfit and was charged a 6.67% sales tax.

terminating decimal

terminating
decimal

$$\frac{1}{4} = 0.25$$

$$\frac{1}{5} = 0.2$$

$$\frac{1}{10} = 0.1$$

$$\frac{1}{8} = 0.125$$

$$\frac{1}{4} = 0.25$$

$$\frac{1}{5} = 0.2$$

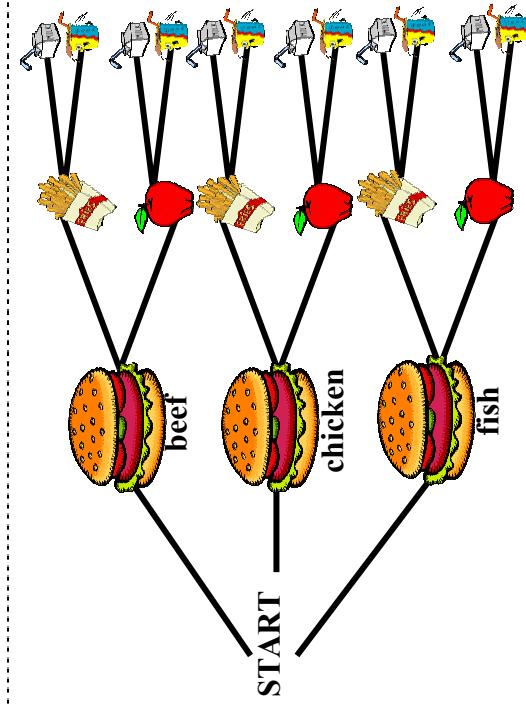
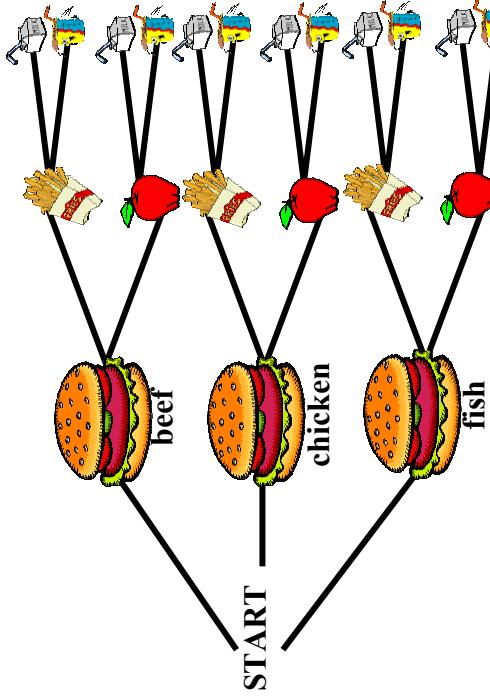
$$\frac{1}{8} = 0.125$$

terminating
decimal

A decimal which has a
finite number of digits.

tree diagrams

tree diagrams



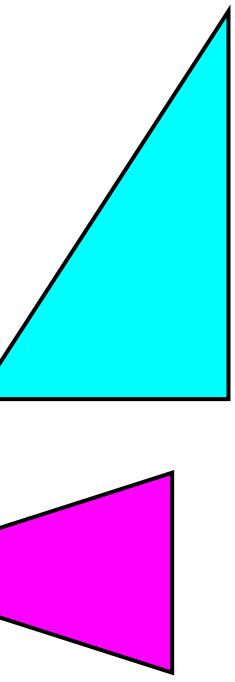
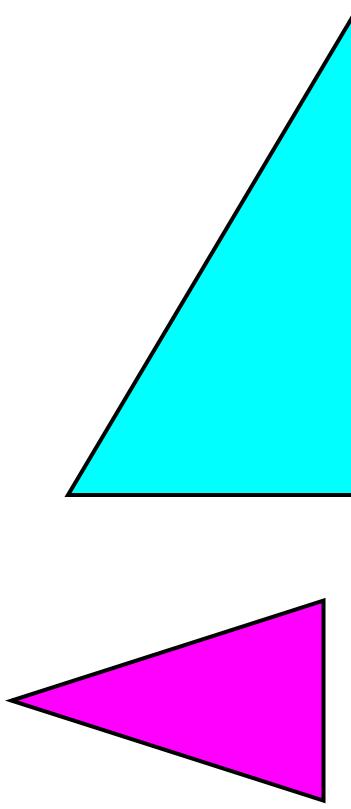
A diagram shaped like a tree used to display sample space by using one branch for each possible outcome.

tree
diagrams

triangle

triangle

triangle



A polygon with three angles and three sides.

unit rate

(constant of proportionality)



Cereal is
\$0.43 per
1 ounce.

unit rate

(constant of proportionality)



Cereal is
\$0.43 per
1 ounce.

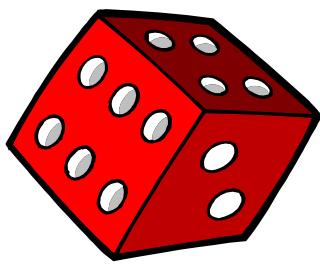
unit rate

(constant of proportionality)

A rate with a
denominator of 1.

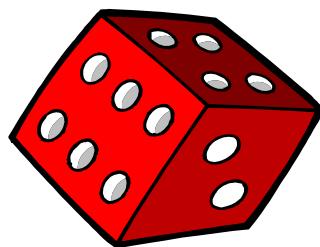
unlikely event

**unlikely
event**



**1-in-6 chance
of rolling a 6**

**unlikely
event**



**1-in-6 chance
of rolling a 6**

An event that will probably not happen.
An outcome with a probability between 0 and 0.5

variable

variable

$$2n + 3 = 11$$

variable

$$2n + 3 =$$

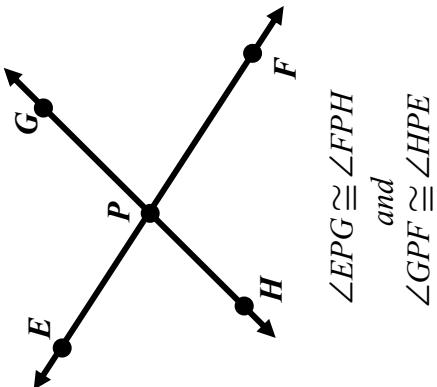
variable

A quantity that changes or can have different values. A symbol, usually a letter, that can stand for a variable quantity.

vertical angle

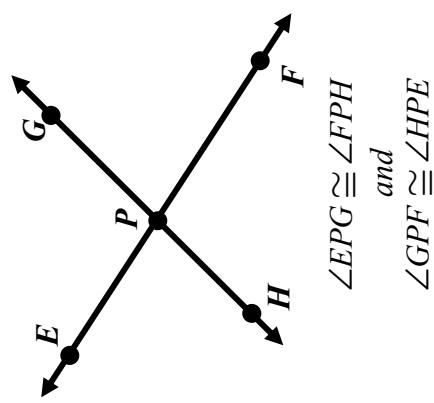
vertical angle

Vertical angles



vertical angle

Vertical angles

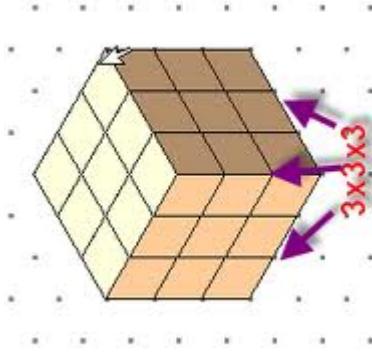


A pair of angles is said to be vertical if the angles share the same vertex and are bounded by the same pair of lines but are opposite to each other. Such angles are congruent and thus have equal measure.

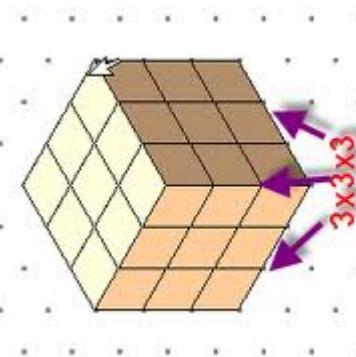
Volume

Volume

Volume =
**27 cubic
units**



Volume =
**27 cubic
units**

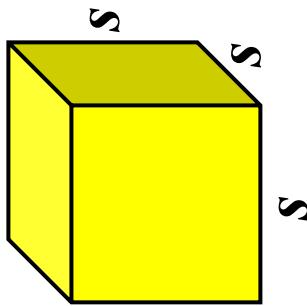


The number of cubic units it takes to fill a figure.

Volume

volume (cube)

volume (cube)

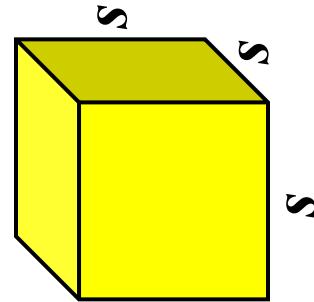


s = length of side

$$V = s^3$$

Volume of Cube:

$$\text{Volume} = (\text{side length})^3$$



s = length of side

$$V = s^3$$

volume (cube)

volume

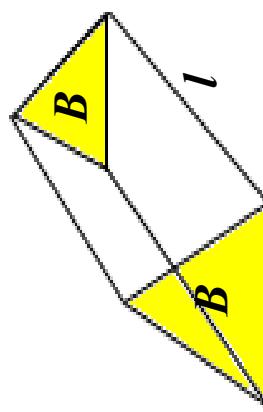
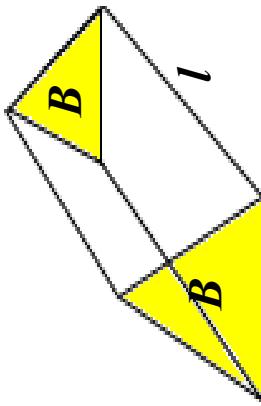
(right prism)

volume

(right prism)

$$V = \text{area of base} \cdot l$$

$$V = B \cdot l$$



volume

(right prism)

$$V = \text{area of base} \cdot l$$

$$V = B \cdot l$$

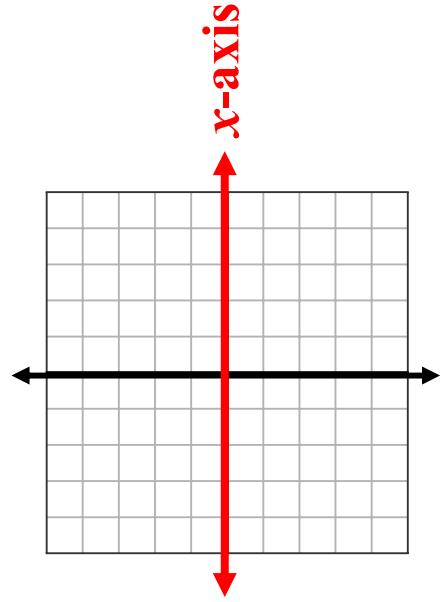
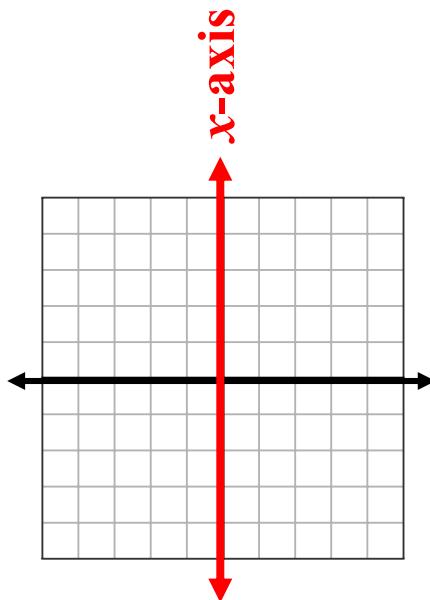
Volume of Right Prism:

$$\text{Volume} =$$

area of base • length

x -axis

x -axis



In a Cartesian grid, the horizontal axis.

x -axis

x -coordinate

x -coordinate

(7, 2)

x -coordinate

(7, 2)

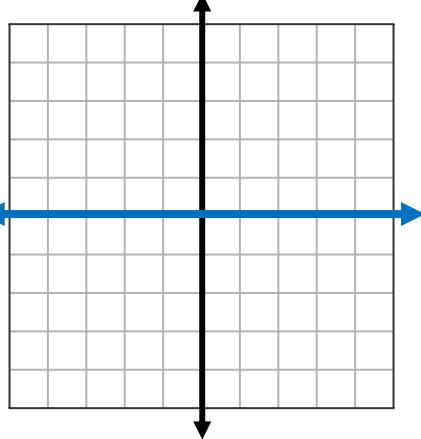
x -coordinate

In an ordered pair, the value that is always written first.

x -coordinate

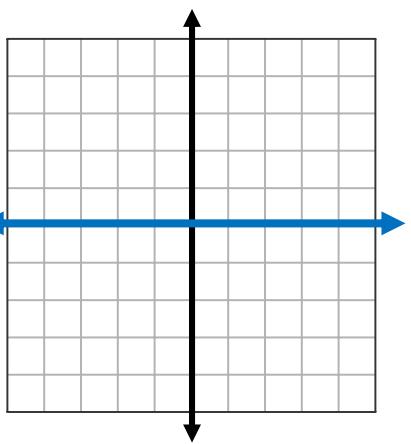
y-axis

y-axis



y-axis

y-axis



y-axis

In a Cartesian grid, the vertical axis.

y -coordinate

y -coordinate

(7, 2)

y -coordinate

(7, 2)

y -coordinate

In an ordered pair, the value that is always written second.

