

# 7<sup>th</sup> Grade

## 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

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**non-zero  
divisor**

$$8 \overline{)578}$$

non-zero divisor

**non-zero  
divisor**

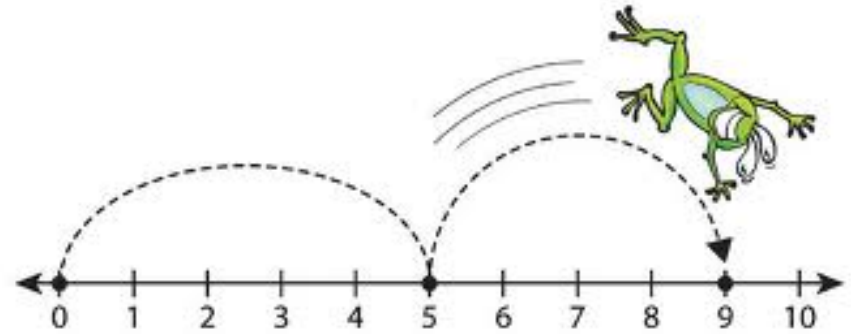
$$8 \overline{)578}$$

non-zero divisor

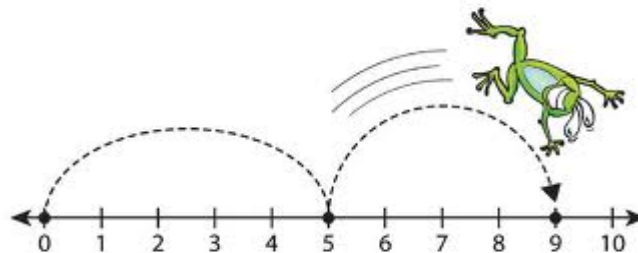
A quantity, not including zero, by which another quantity, the dividend, is to be divided.

# number line

number  
line



number  
line

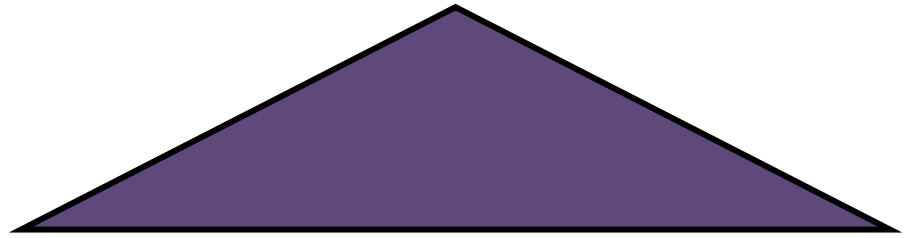


A diagram that represents  
numbers as points on a  
line.

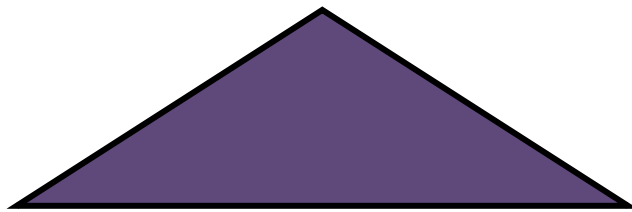
# obtuse triangle

---

obtuse  
triangle



obtuse  
triangle



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

# ordered pair

---

ordered  
pair

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

ordered  
pair

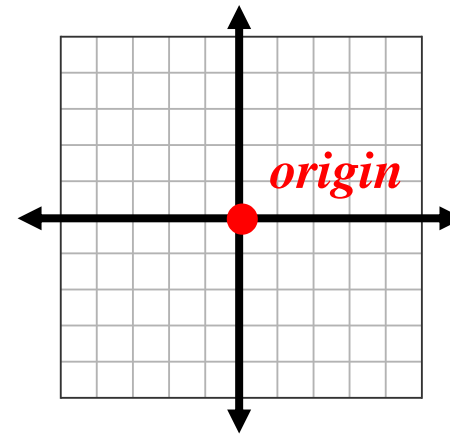
$(-5, 2)$   
 $(x, y)$

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.

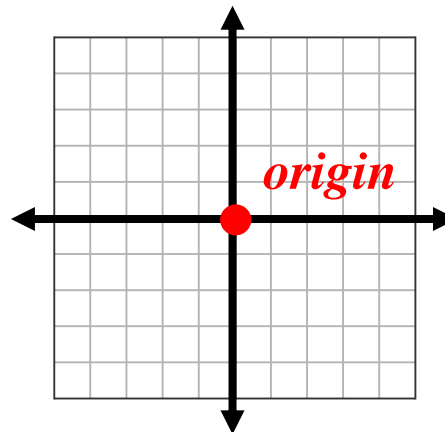
# origin

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## origin



## origin

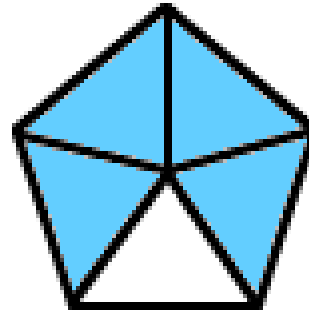


The intersection of the  $x$ - and  $y$ -axes in a coordinate plane, described by the ordered pair  $(0, 0)$ .

# percent

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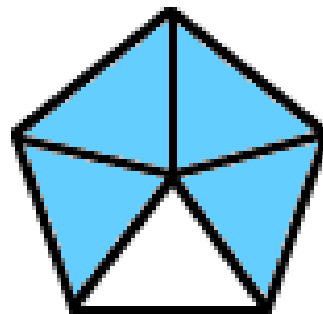
## percent



**80% of  
the  
pentagon  
is shaded.**

---

## percent



**80% of  
the  
pentagon  
is  
shaded.**

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%.

## percent decrease

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Also expressed a percent decrease 20%.

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?



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

## percent error

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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

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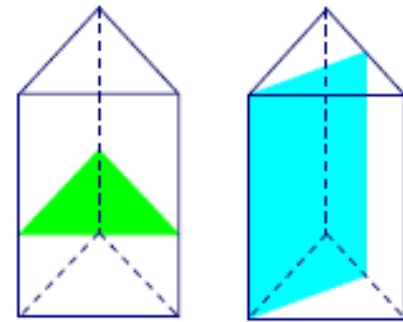


Percent increase is a measure of percent change, which is the extent to which a variable gains value. It is found by comparing the initial (or before) and final (or after) quantities according to a specific formula. It is assumed that both the initial and the final quantities are positive (larger than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

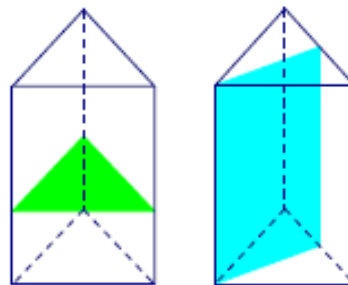
# plane sections

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## plane sections



## plane sections

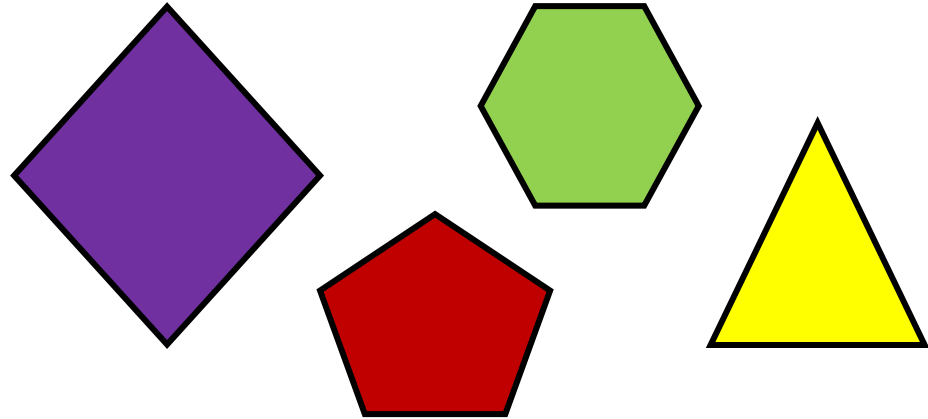


The area created by a plane cutting through a solid.

# polygon

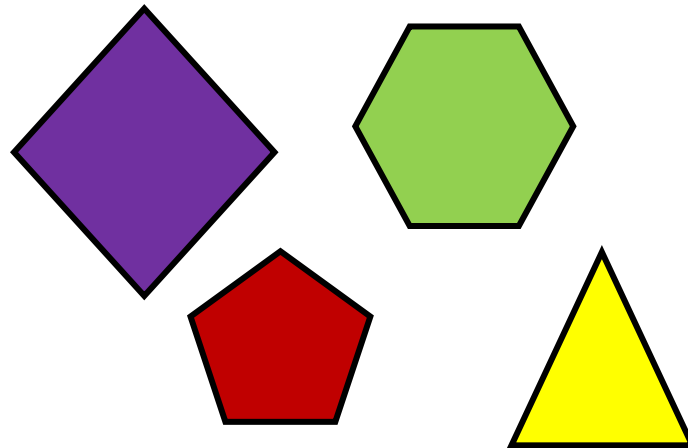
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## polygon



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## polygon



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

# population

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## population



Hat Size  
7 1/8

Shoe Size  
9B

Height  
68"

Weight  
115 lb.

---

## population



Hat Size  
7 1/8

Shoe Size  
9B

Height  
68"

Weight  
115 lb.

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.

# prediction

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# prediction

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# prediction

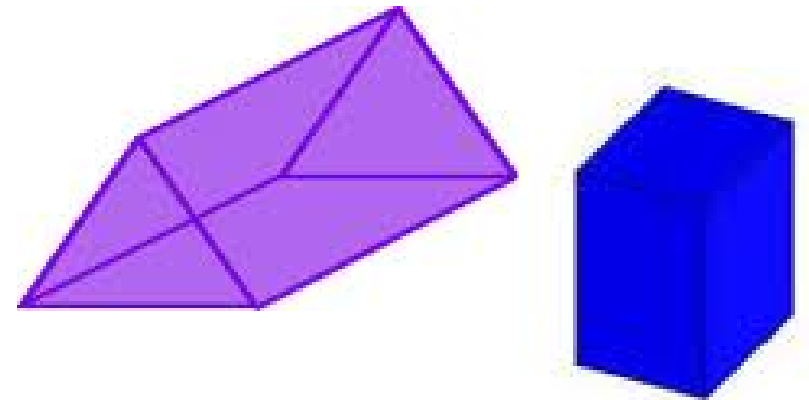


To state in advance on the basis of observation, experience, or scientific reason.

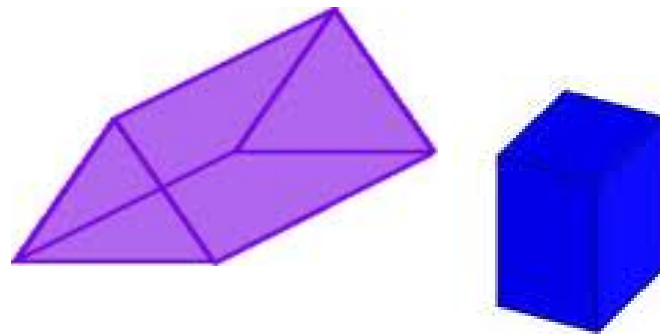
# prism

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## prism



## prism



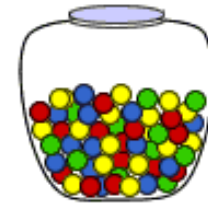
A 3-dimensional figure that has two congruent and parallel faces that are polygons. The remaining faces are parallelograms.

# probability

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**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?

# probability

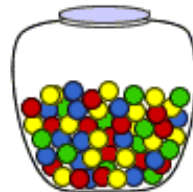


$$P(\text{red}) = \frac{\text{\# of ways to choose red}}{\text{total \# of marbles}} = \frac{6}{22} = \frac{3}{11}$$

---

**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?

# probability



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

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



# proportion

---

proportion



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

---

proportion



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

An equation showing that two ratios are equivalent.

# proportional relationship

## 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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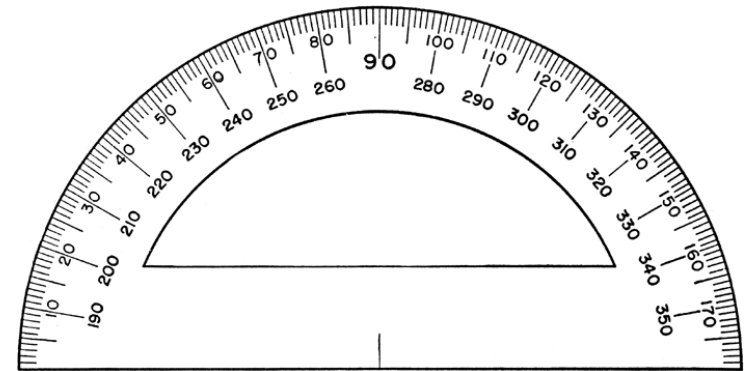


A proportional relationship is a relationship between two variable quantities  $x$  and  $y$ , where  $y$  is a constant multiple ( $k$ ) of  $x$ . This can be expressed in the simple equation,  $y = kx$ .

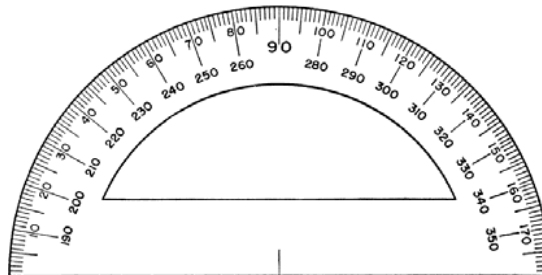
# protractor

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## protractor



## protractor

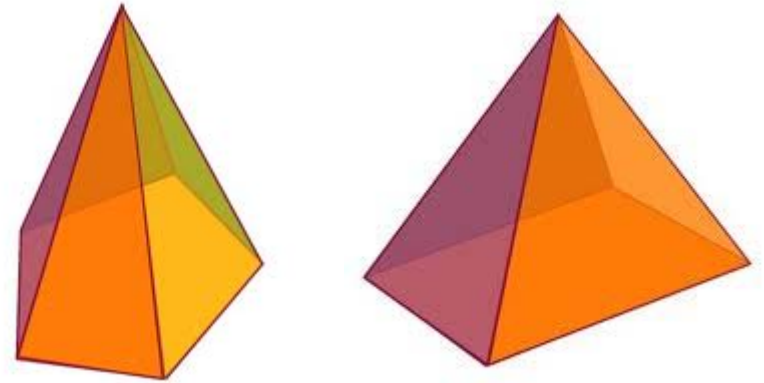


A tool used to measure and draw angles.

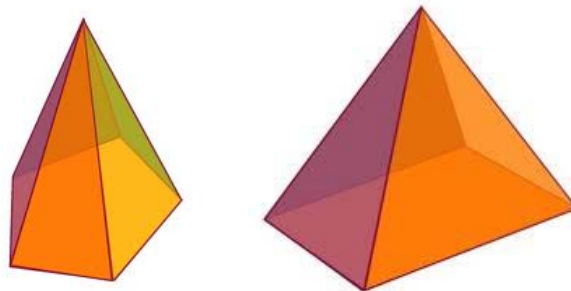
# pyramid

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## pyramid



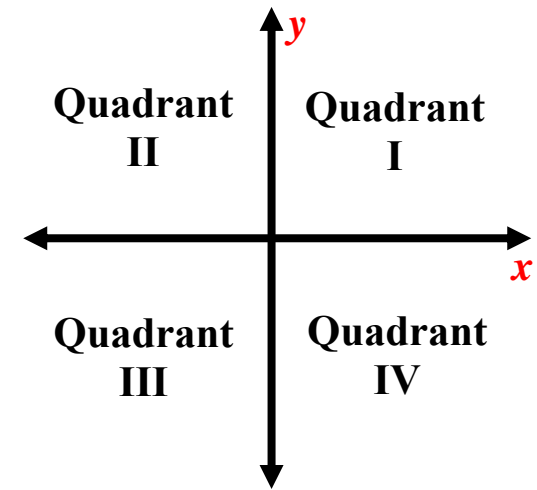
## pyramid



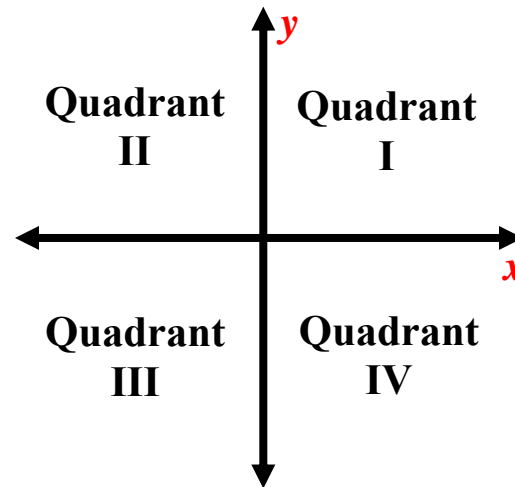
A polyhedron whose base is a polygon and whose other faces are triangles that share a common vertex.

# quadrants

quadrants



quadrants

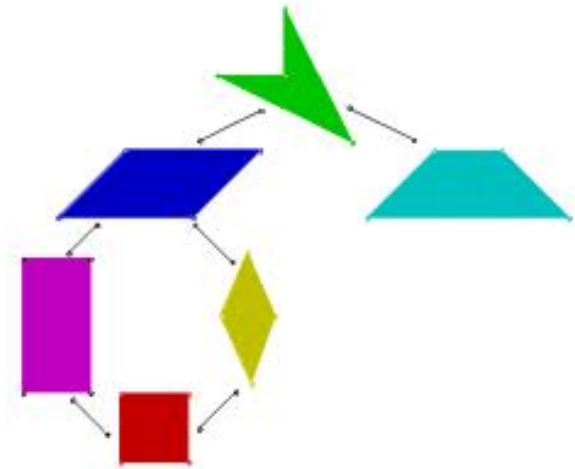


The four sections of a coordinate grid that are separated by the axes.

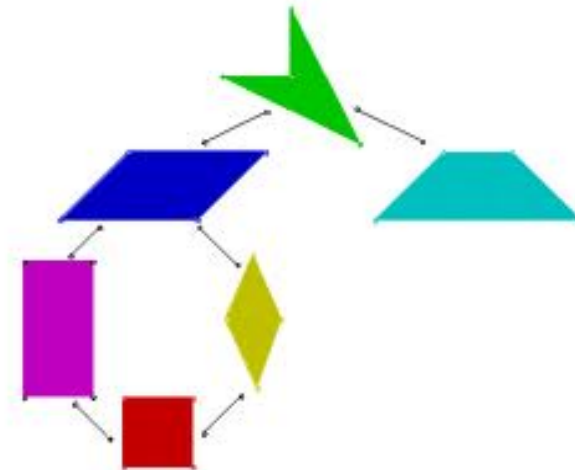
# quadrilateral

---

quadrilateral



quadrilateral



A four-sided  
polygon.

# quotient

---

## quotient

quotient

$$9 \overline{) 137} \quad \mathbf{15 \ R 2}$$

## quotient

quotient

$$9 \overline{) 137} \quad \mathbf{15 \ R 2}$$

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!

## random sample



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



# rate

---

## rate



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

## rate

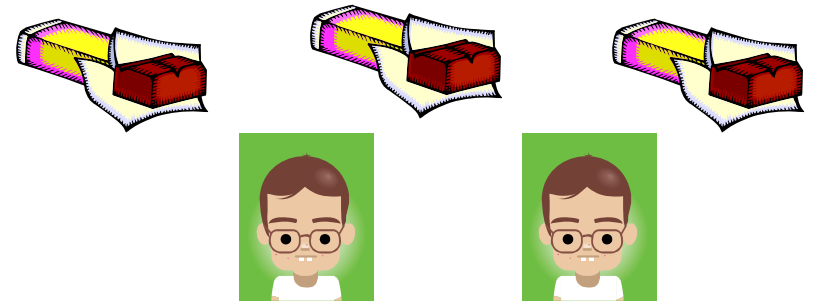


**The car was traveling 65 miles per hour on the freeway.**

A ratio comparing two different units.

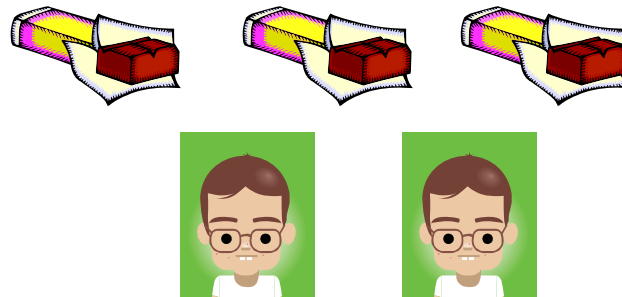
# ratio

ratio



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

ratio



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

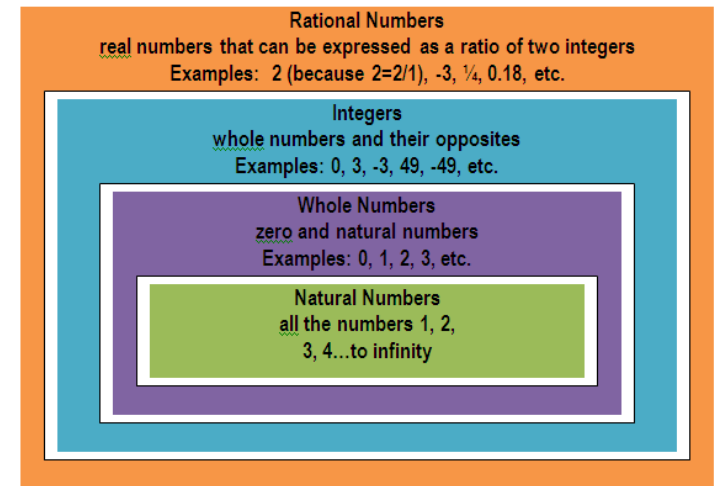
$$\frac{2}{3}x+7$$

*rational coefficient*

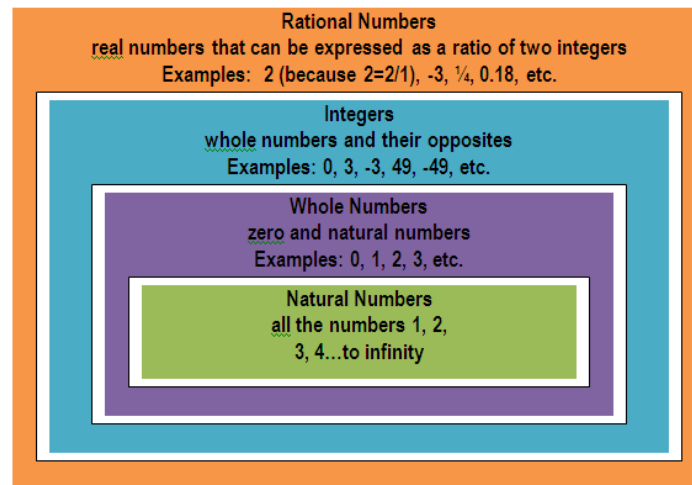
A rational number  
which multiplies a  
variable.

# 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:

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



## 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.

# repeating decimal

---

repeating  
decimal

$$\frac{1}{3} = 0.33333333333333$$

$$\frac{1}{7} = 0.142857142857$$

---

repeating  
decimal

$$\frac{1}{3} = 0.33333333333333$$

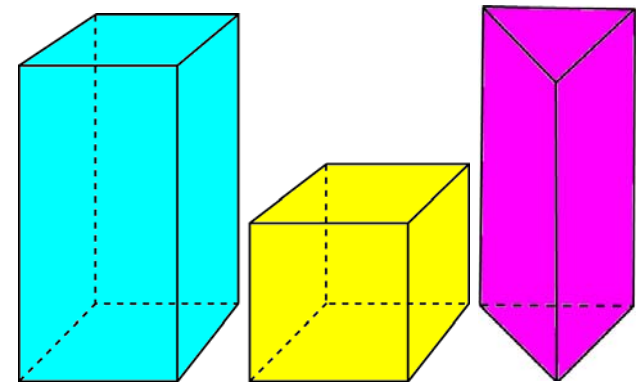
$$\frac{1}{7} = 0.142857142857$$

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

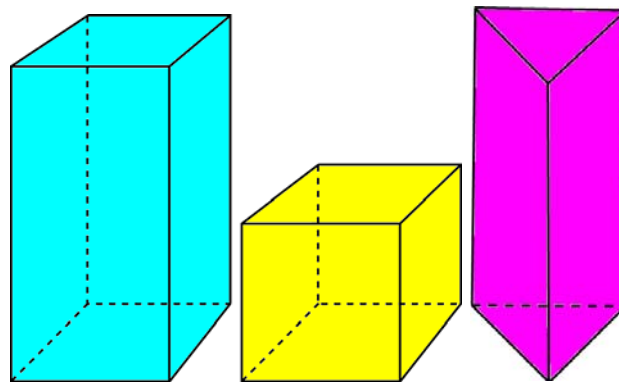
# right prism

---

right  
prism



right  
prism



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

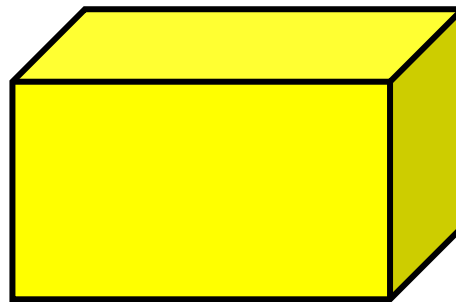
# right rectangular prism

---

right rectangular  
prism



right  
rectangular  
prism



.....

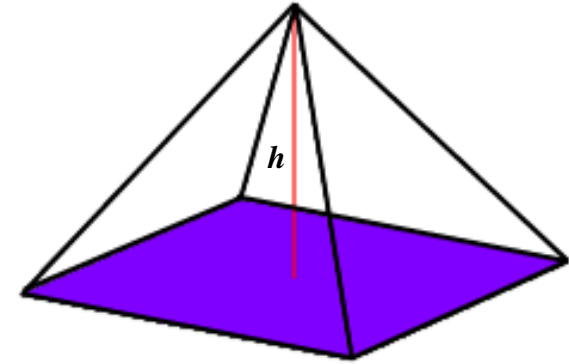
A prism with six rectangular faces where the lateral edge is perpendicular to the plane of the base.



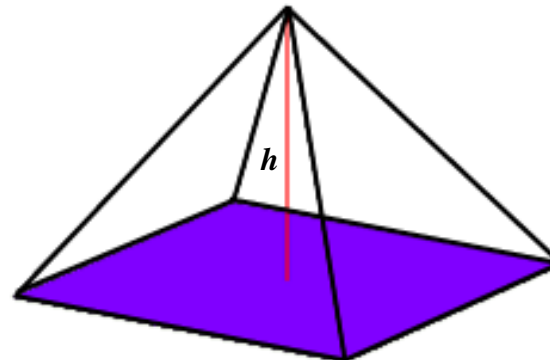
# right rectangular pyramid

---

right rectangular  
pyramid



right  
rectangular  
pyramid

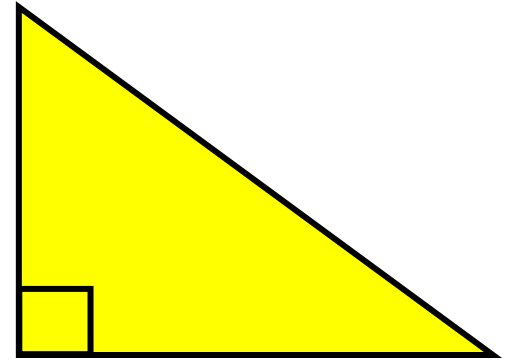


A pyramid that has its apex aligned directly above the center of its rectangular base.

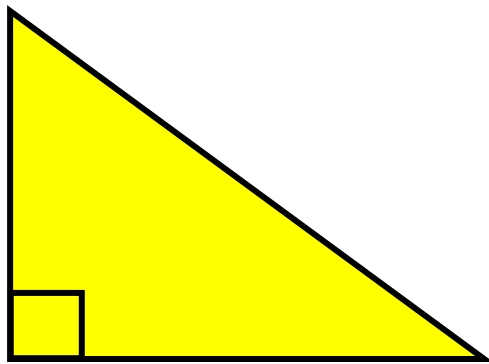
# right triangle

---

## right triangle



## right triangle



A triangle that has one  
 $90^\circ$  angle.

# sample space

---

sample  
space



**sample space:** {head, tail}



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

---

sample  
space



**sample space:** {head, tail}

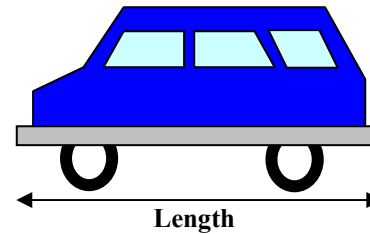


**sample space:** {1, 2, 3, 4, 5, 6}

The set of all possible outcomes of a random process.

# scale drawing

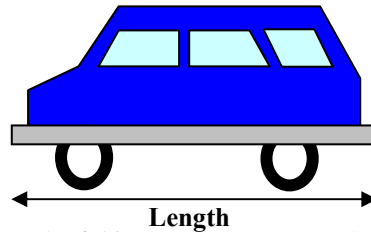
Since it is not always possible to draw on paper the actual size of real-life objects such as the real size of a car, an airplane, we need scale drawings to represent the size like the one you see below of a van.



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

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.



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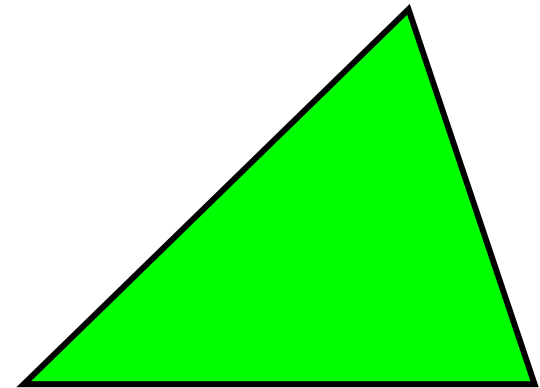
A drawing of an object or structure showing all parts in the same proportion of their true size.

# scale drawing

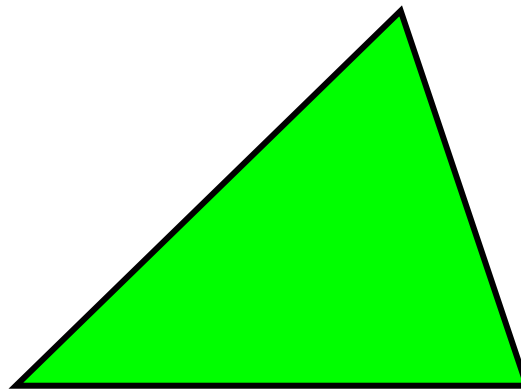
# scalene triangle

---

scalene  
triangle



scalene  
triangle



A triangle that has no  
congruent sides.

# signed number

---

signed  
number

-5      +8  
+45      -23

---

signed  
number

-5      +8  
+45      -23

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.

---

## 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.

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

# simulation

---

## simulation

---



## simulation



Carrying out a simple  
experiment to collect  
data.



# solution set

---

## solution set

The solution set of the equation  
 $3x + 2 = 5$  is  $\{1\}$ .

The solution set of the equation  
 $3x + 2 = 3x + 2$  is  $(-\infty, \infty)$ .

---

## solution set

The solution set of the equation  
 $3x + 2 = 5$  is  $\{1\}$ .

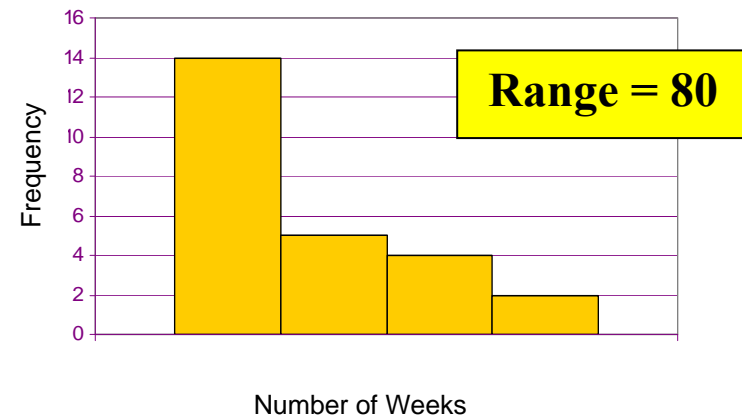
The solution set of the equation  
 $3x + 2 = 3x + 2$  is  $(-\infty, \infty)$ .

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

# spread

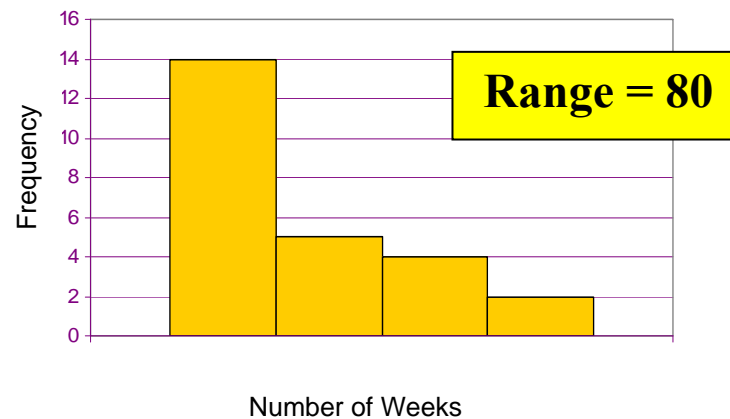
# spread

Number of Weeks on the Top 200 Chart



# spread

Number of Weeks on the Top 200 Chart

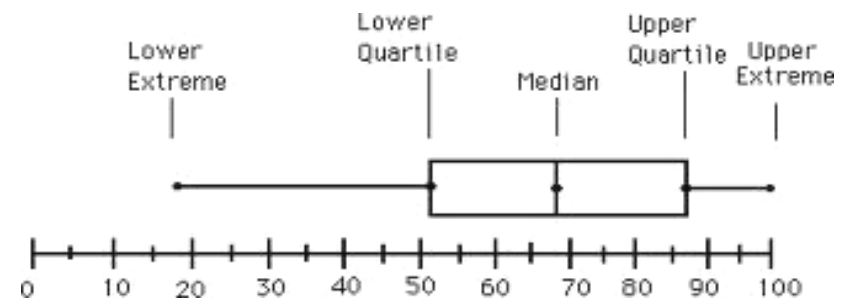


A measure of how much a collection of data is spread out. Commonly used types include range and quartiles. (Also known as measures of variation or dispersion.)

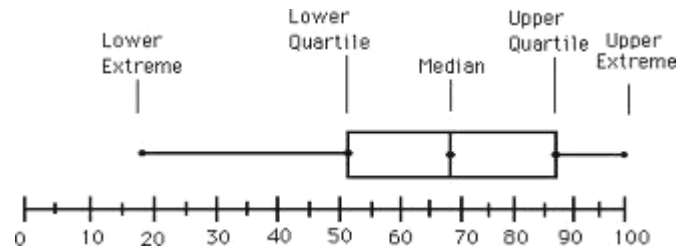
# statistical variability

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## statistical variability



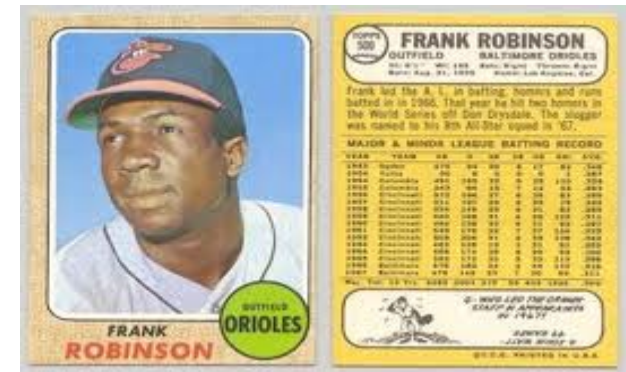
## statistical variability



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

This baseball card shows statistics for a famous baseball player.



# statistics

This baseball card shows statistics for a famous baseball player.



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

# statistics

# substitution

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## substitution

If  $x$  is equal to  $9$ , then ...

$$8x + 4 = ?$$

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

## substitution

If  $x$  is equal to  $9$ , then ...

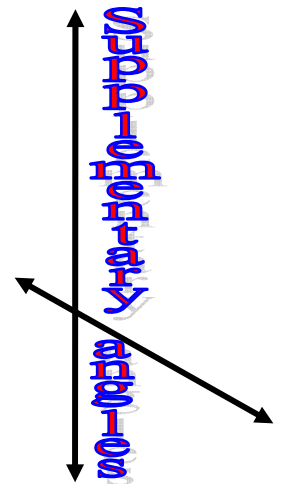
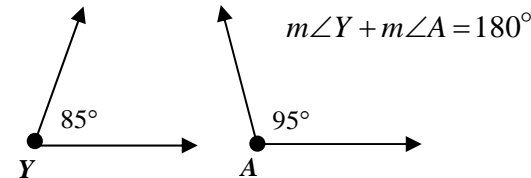
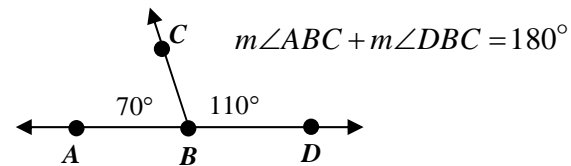
$$8x + 4 = ?$$

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

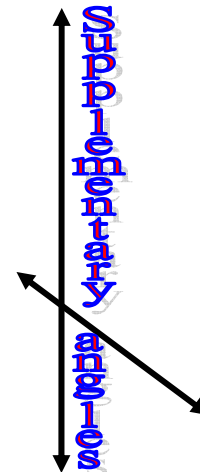
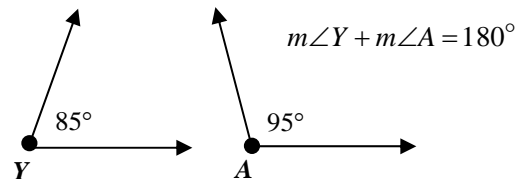
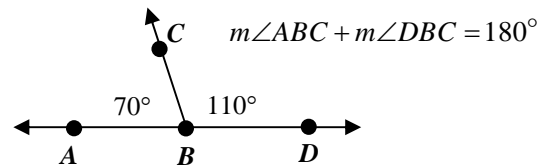
The replacement of the letters in an algebraic expression with known values.

# supplementary angles

## supplementary angles



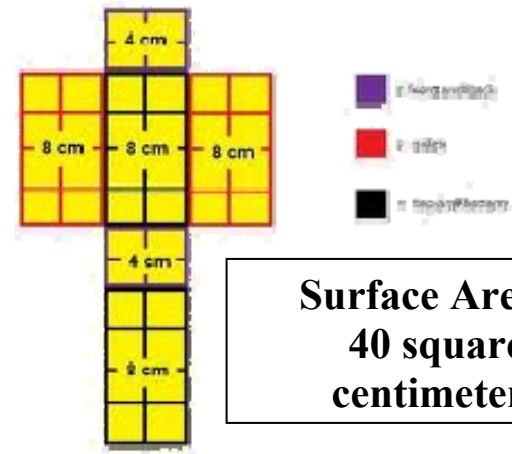
## supplementary angles



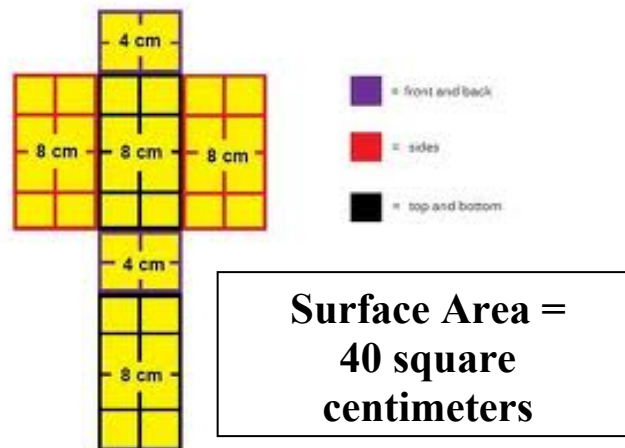
If the sum of the measures of two angles is  $180^\circ$ , then the two angles are **supplementary**. If two angles form a straight line, then they are supplementary.

# surface area

surface  
area



surface  
area

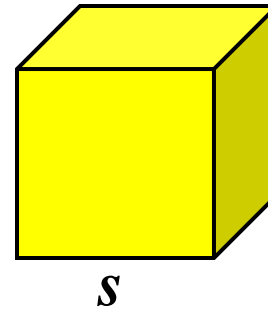


The total area of the faces (including the bases) and curved surfaces of a solid figure.

# surface area (cube)

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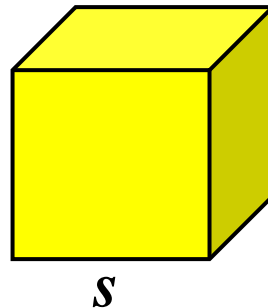
## surface area (cube)



$s$  = length of base

$$SA = 6s^2$$

## surface area (cube)



$s$  = length of side

$$SA = 6s^2$$

Surface Area of Cube:

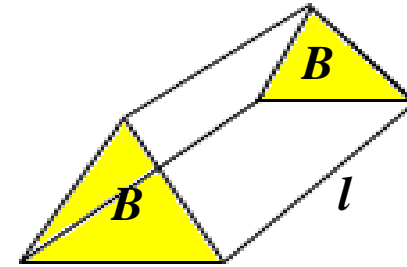
$$\text{Surface Area} = 6 \cdot (\text{length of side})^2$$



# surface area (right prism)

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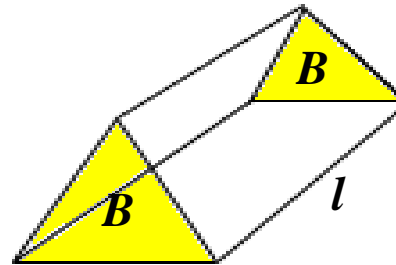
## surface area (right prism)



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

---

## surface area (right prism)



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

Surface Area of Right Prism:

Surface Area =  
lateral area + area of two ends

# tax

---

## tax



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

# terminating decimal

---

terminating  
decimal

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

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

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

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

---

terminating  
decimal

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

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

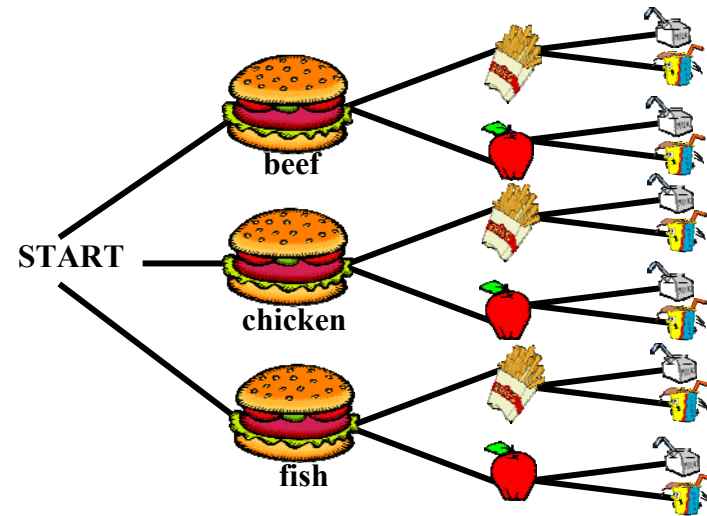
$$\frac{1}{8} = 0.125$$

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

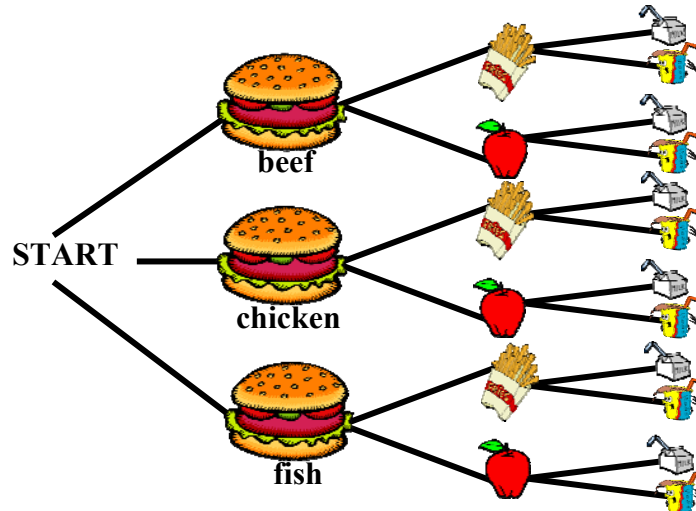
A decimal which has a  
finite number of digits.

# tree diagrams

## tree diagrams



## tree diagrams

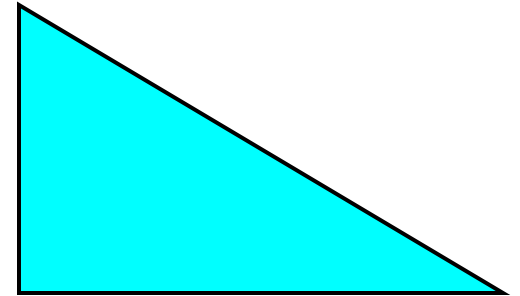
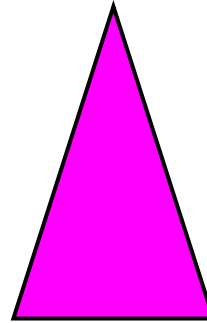


A diagram shaped like a tree used to display sample space by using one branch for each possible outcome.

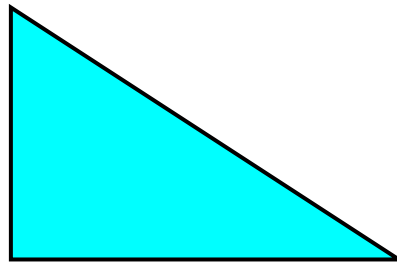
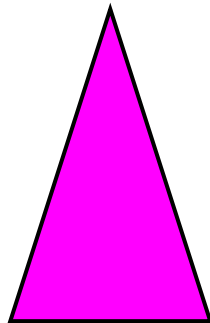
# triangle

---

triangle



triangle



A polygon with three angles and three sides.

# unit rate

(constant of proportionality)

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## unit rate

(constant of proportionality)

Cereal is  
\$0.43 per  
1 ounce.



## unit rate

(constant of proportionality)

Cereal is  
\$0.43 per  
1 ounce.

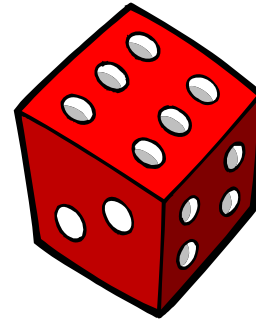


A rate with a  
denominator of 1.

# unlikely event

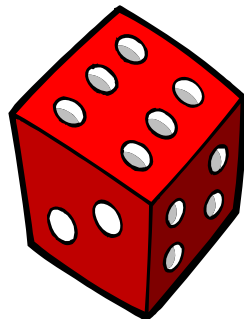
---

unlikely  
event



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

unlikely  
event



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

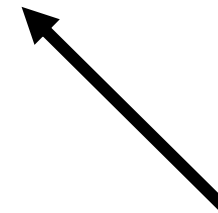
An event that will  
probably not happen.  
An outcome with a  
probability between 0  
and 0.5

# variable

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variable

$$2n + 3 = 11$$

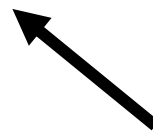


variable

---

variable

$$2n + 3 =$$



variable

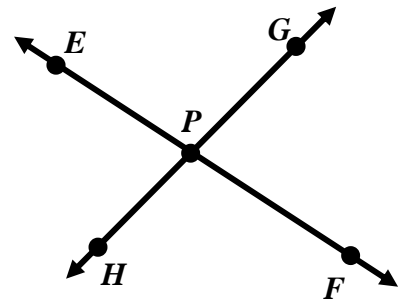
A quantity that changes or can have different values. A symbol, usually a letter, that can stand for a variable quantity.



# vertical angle

## vertical angle

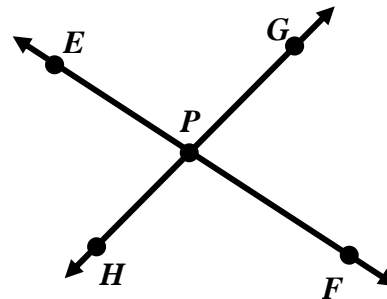
vertical  
angles



$$\begin{aligned} \angle EPG &\cong \angle FPH \\ &\text{and} \\ \angle GPF &\cong \angle HPE \end{aligned}$$

## vertical angle

vertical  
angles

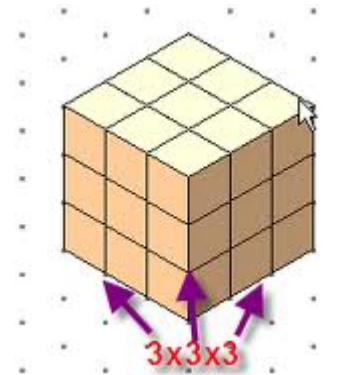


$$\begin{aligned} \angle EPG &\cong \angle FPH \\ &\text{and} \\ \angle GPF &\cong \angle HPE \end{aligned}$$

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.

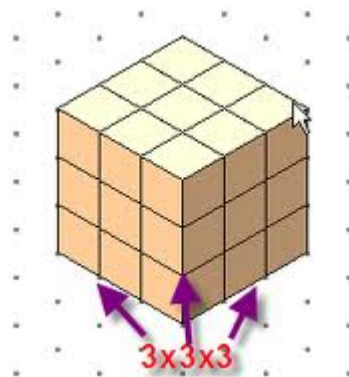
# volume

volume



Volume =  
27 cubic  
units

volume



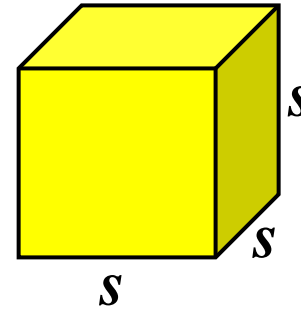
Volume =  
27 cubic  
units

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

# volume (cube)

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volume  
(cube)

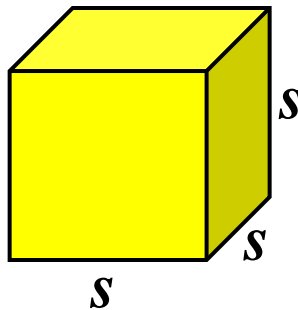


$s = \text{length of side}$

$$V = s^3$$

---

volume  
(cube)



$s = \text{length of side}$

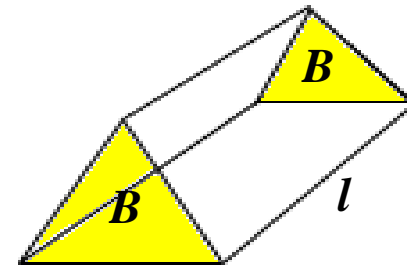
$$V = s^3$$

Volume of Cube:

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

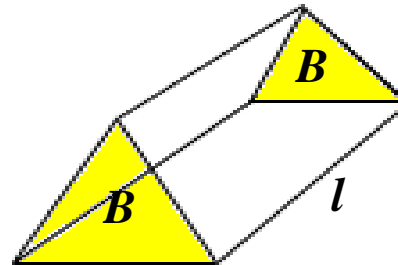
# volume (right prism)

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## volume (right prism)

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



## volume (right prism)

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

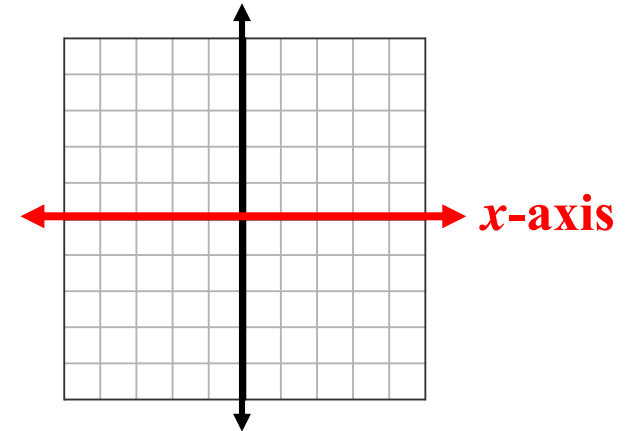
Volume of Right Prism:

Volume =  
area of base • length

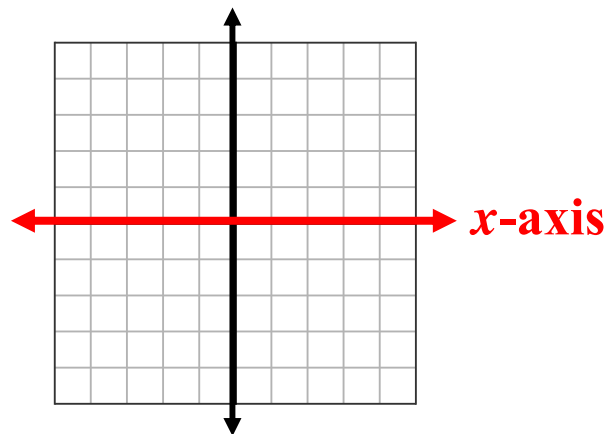
# $x$ -axis

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## $x$ -axis



## $x$ -axis



In a Cartesian grid, the horizontal axis.

# $x$ -coordinate

---

$x$ -coordinate

$(7, 2)$

$x$ -coordinate

---

$x$ -coordinate

$(7, 2)$

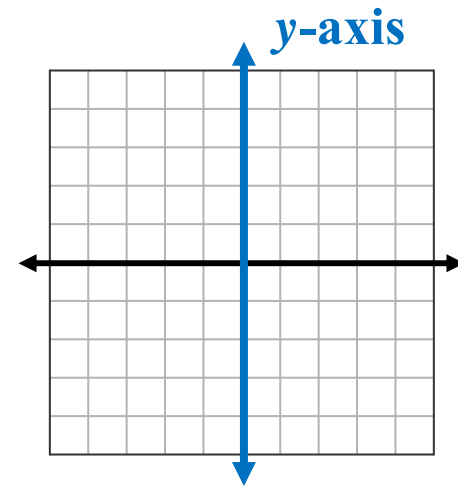
$x$ -coordinate

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

# *y*-axis

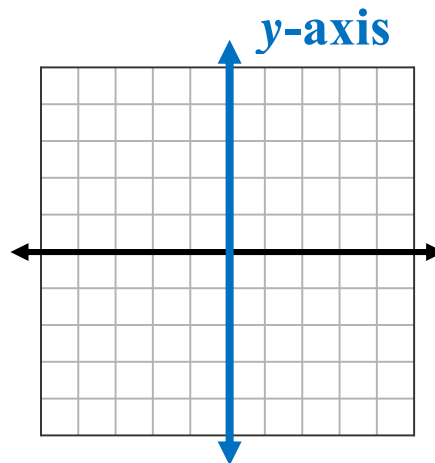
---

## *y*-axis



---

## *y*-axis



In a Cartesian grid, the vertical axis.

# *y*-coordinate

---

*y*-coordinate

(7, 2)

*y*-coordinate

---

*y*-coordinate

(7, 2)

*y*-coordinate

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



