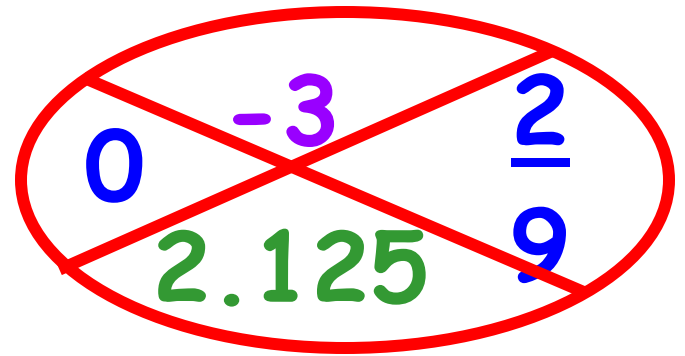


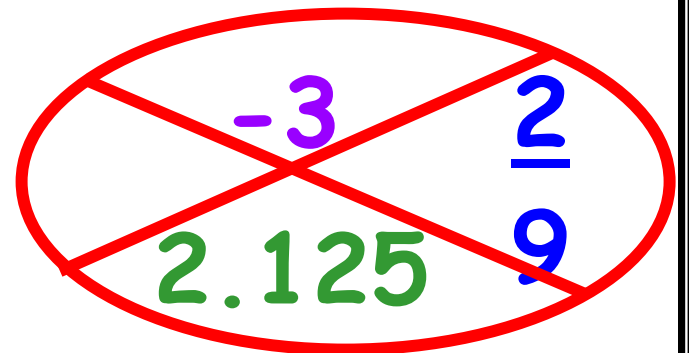
5 natural number

285⁶ 34791⁹⁵



0 whole number **95**

285⁶ 34791⁵



+ sign -

positive

negative

5 0 integer

-95

285

-4791

-6

~~-3.1 2
2.125 9~~

opposite

$-5 \rightarrow 5$

$-37 \rightarrow 37$

$15 \rightarrow -15$

$200 \rightarrow -200$

negative

below zero

-5°

loss of yards

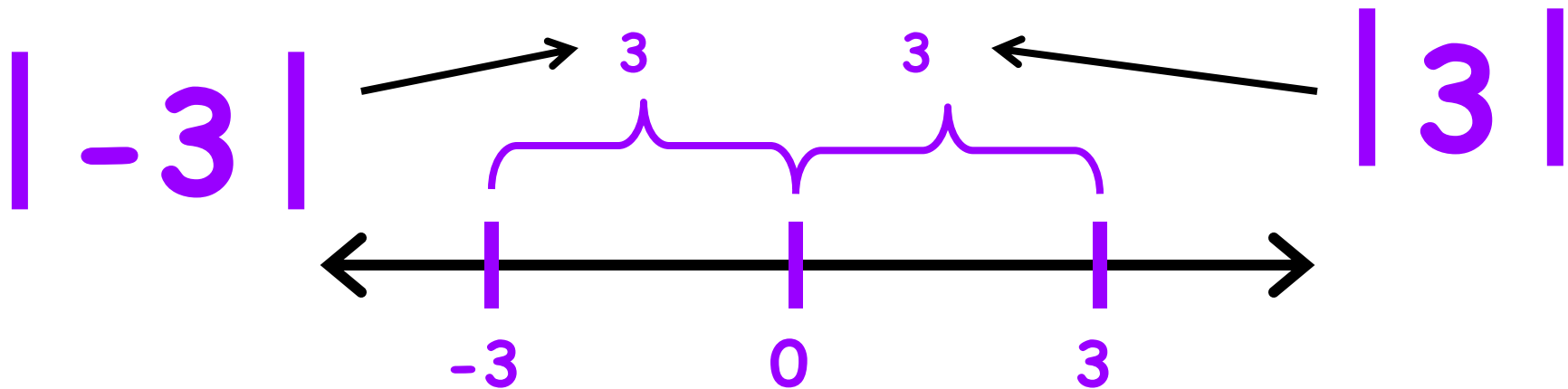
-15 yds

below sea level

-200 ft

positive 75°
above zero
yards gained 10 yds
above sea level 500 ft

absolute value



$2x, 3y, 5$

term

$6ab, 12$

$$2x + 3y - 5$$

$$6ab + 12$$

x, y

variable

a, b

$$2x + 3y - 5$$

$$6ab + 12$$

commutative property

$$6a + 12 = 12 + 6a$$

$$3x \cdot 5 = 5 \cdot 3x$$

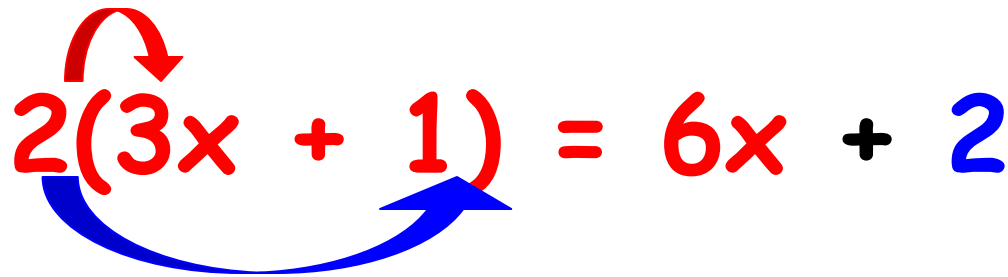
associative property

$$3 + (a + 5) = (3 + a) + 5$$

$$2 \cdot (x \cdot 4) = (2 \cdot x) \cdot 4$$

distributive property

$$2(3x + 1) = (3x + 1) + (3x + 1) = 6x + 2$$


$$2(3x + 1) = 6x + 2$$

algebraic expression

$$\begin{array}{r} 2x \\ -x + 2 \\ \hline x + 2 \end{array} \quad \begin{array}{r} 2x + 3 \\ 4x - 4 \\ \hline 6x - 1 \end{array} \quad \begin{array}{r} -3x \\ -4 \\ \hline -3x - 4 \end{array}$$

linear equation

$$y = 2x$$

$$2x + 3 = y$$

$$y = -x + 2$$

direct proportion

$$y = 3x$$

x	y
-1	-3
0	0
2	6

$$y = -2x$$

x	y
-1	2
0	0
2	-4

$$C = \pi d$$

500 miles
500 km

constant of
proportionality ($y = kx$)

Traveling 70 mph for 3 hours = 210 miles traveled

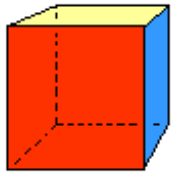
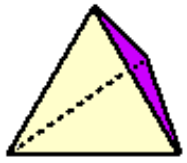
variation

inverse

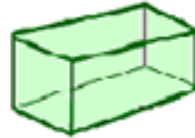
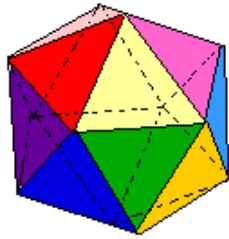
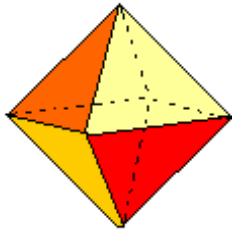
$$y = \frac{k}{x}$$

direct

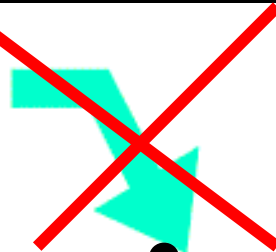
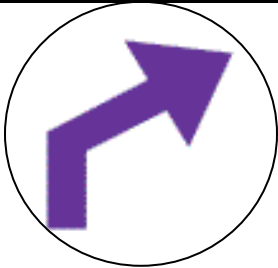
$$y = kx$$



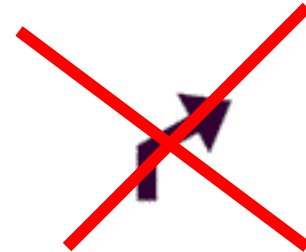
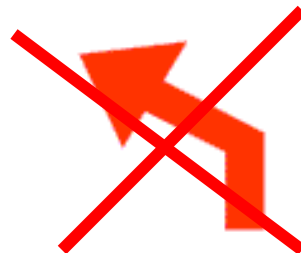
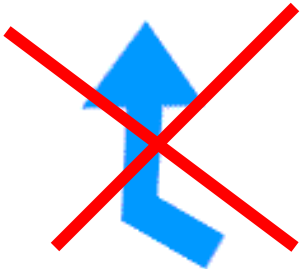
polyhedron

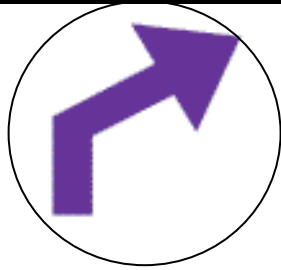


REGULAR or PLATONIC SOLIDS

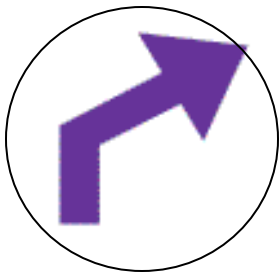
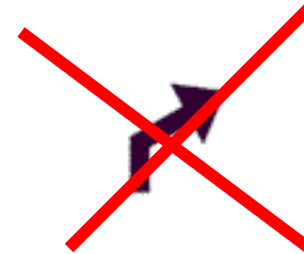
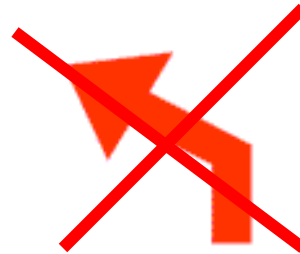


translation

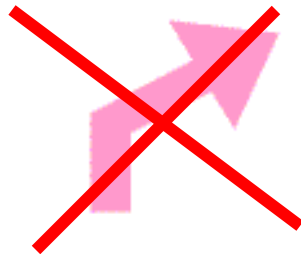
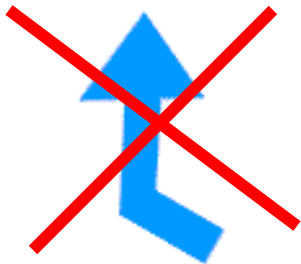


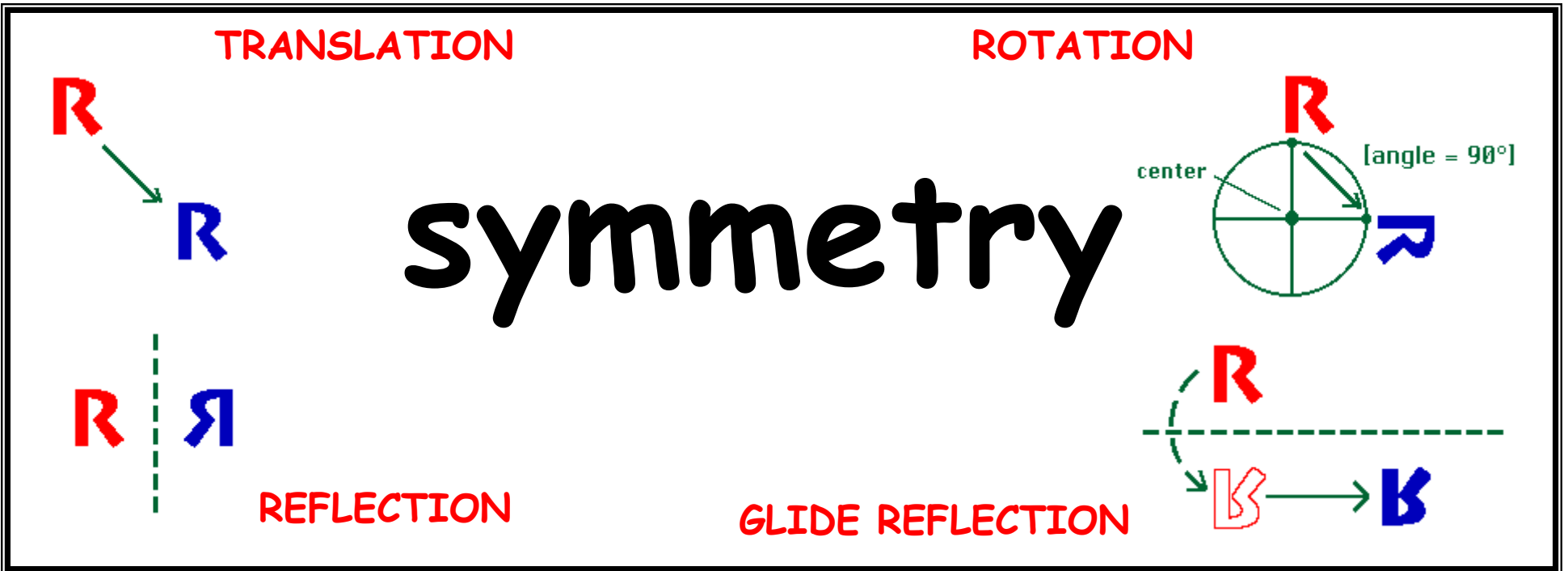


rotation

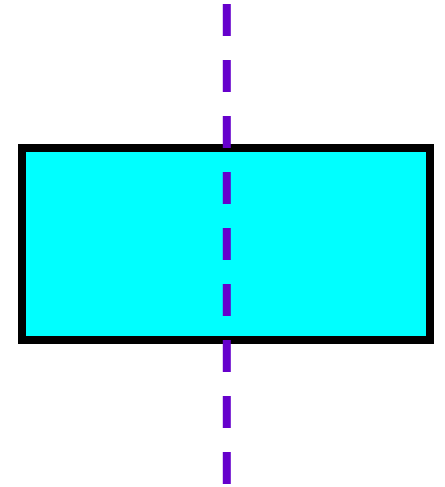
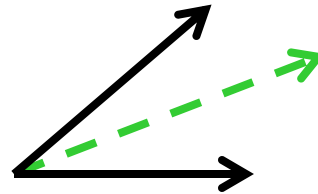
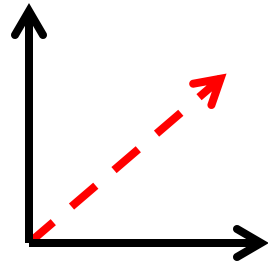
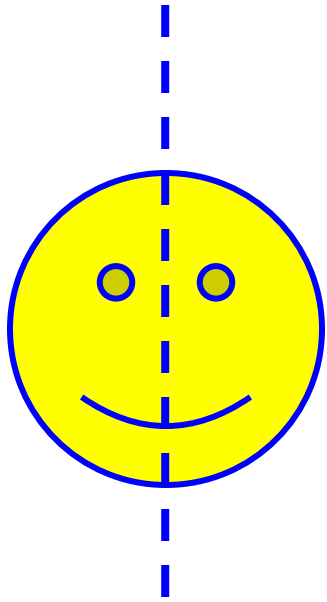


reflection

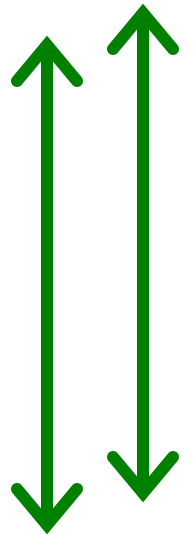
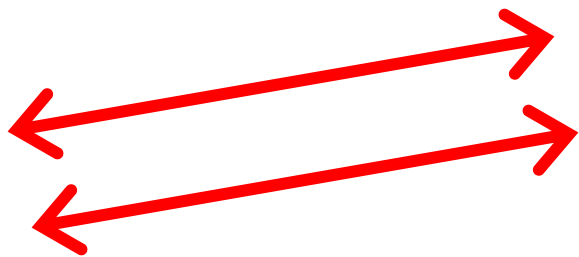




bisector



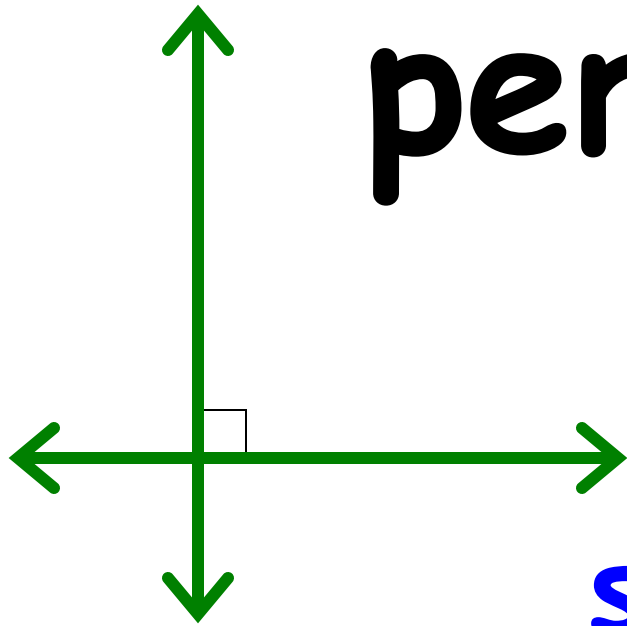
parallel lines



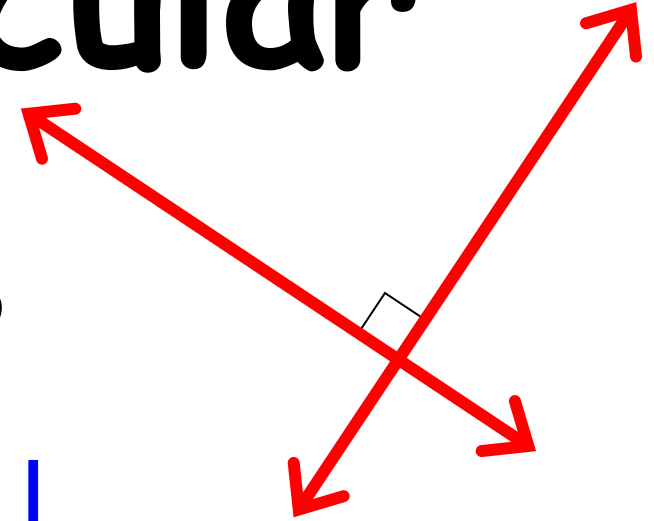
symbol

||

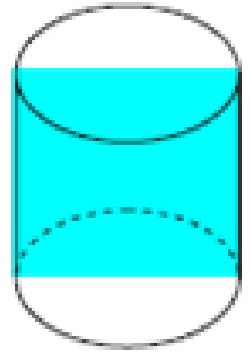
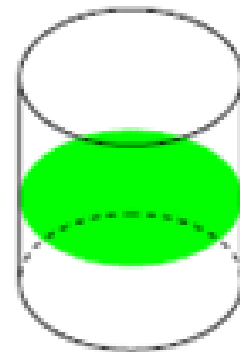
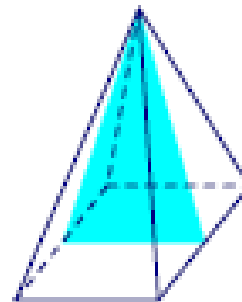
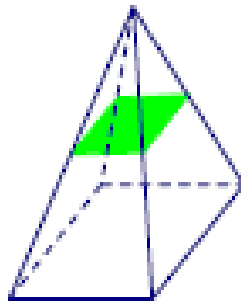
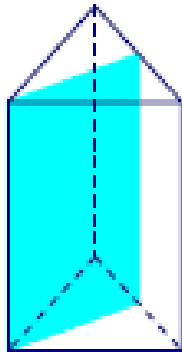
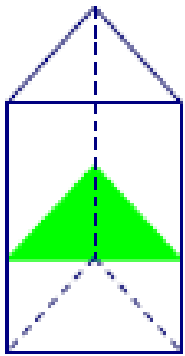
perpendicular lines



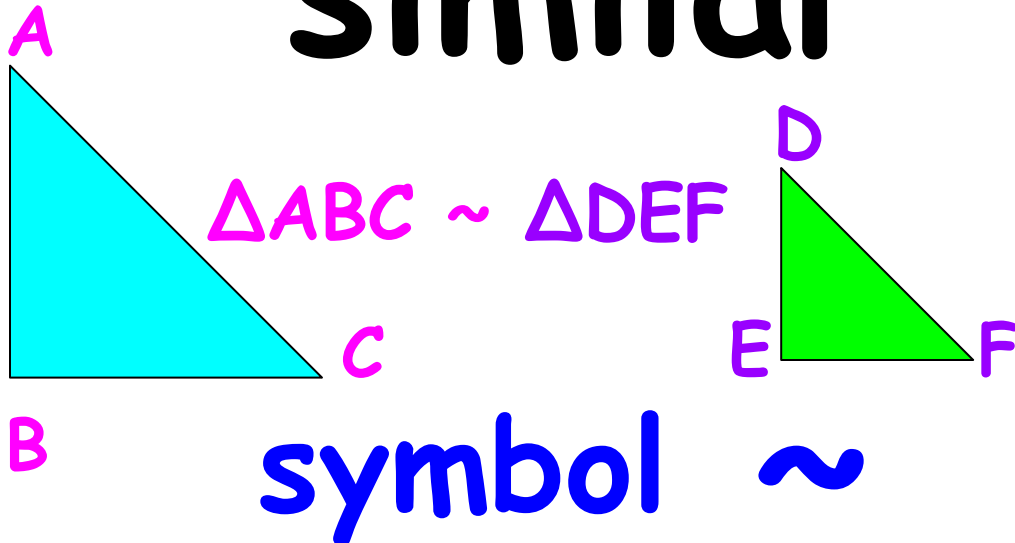
symbol \perp



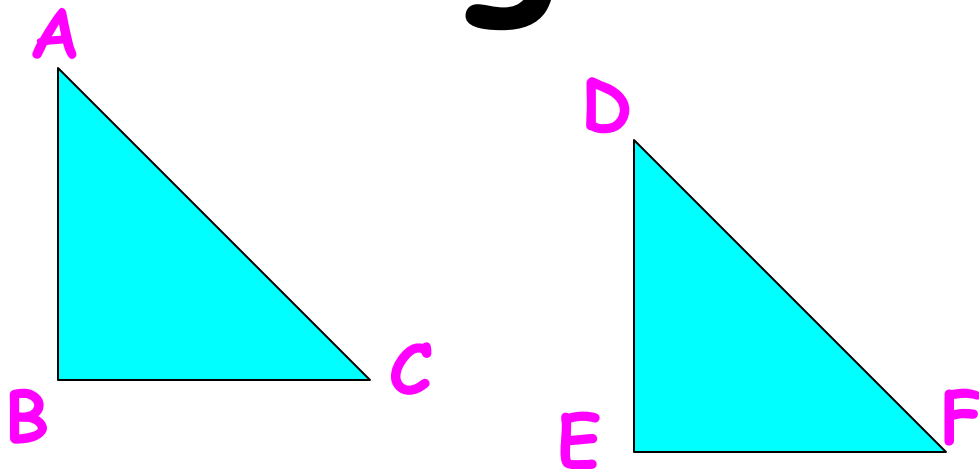
cross-section



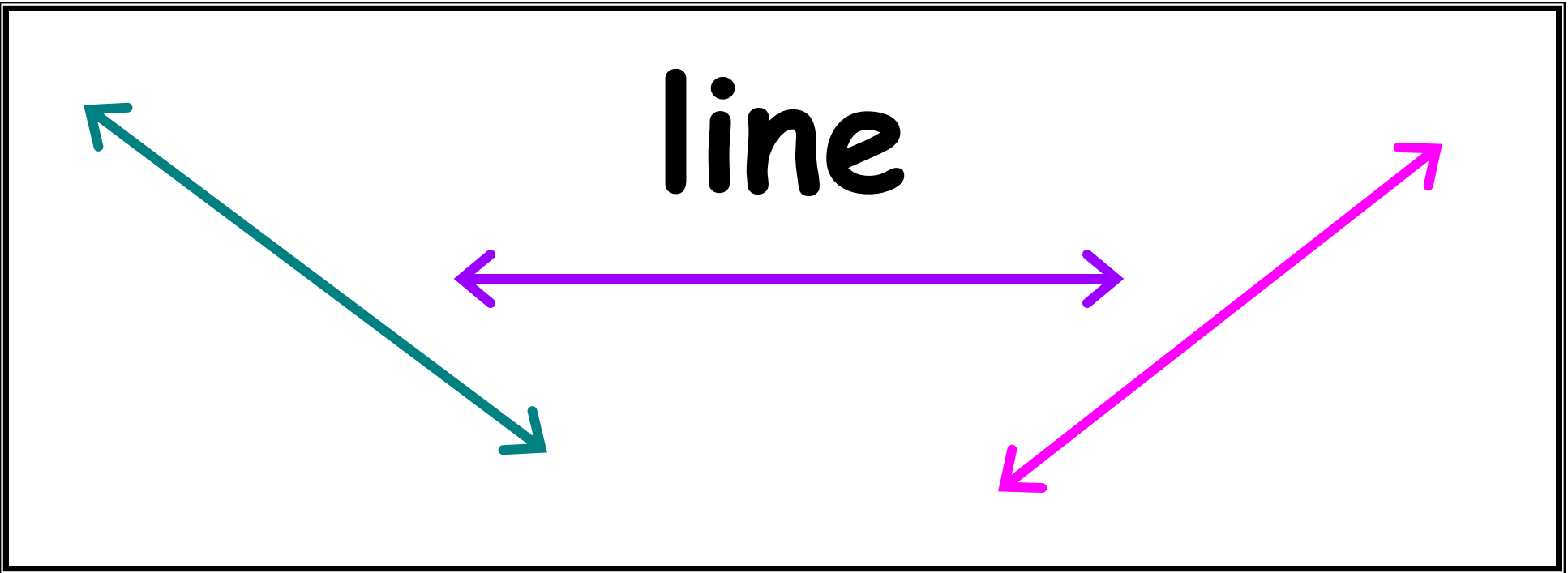
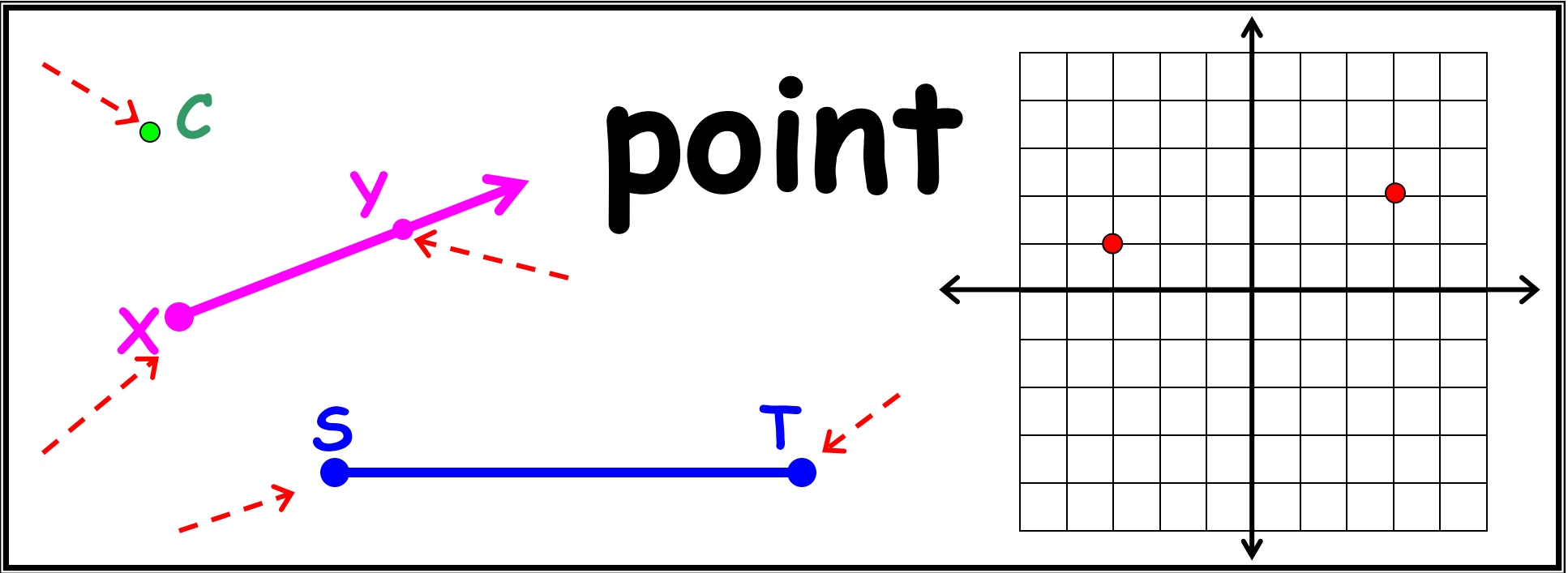
similar

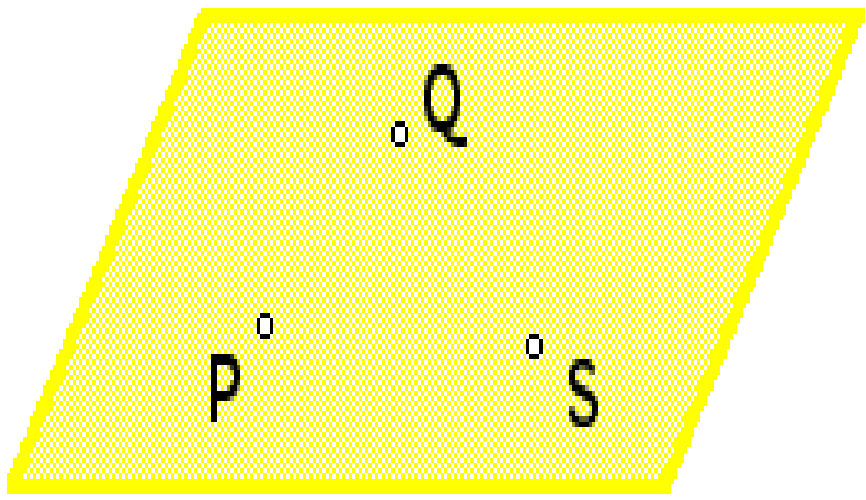


congruent



$$\Delta ABC \cong \Delta DEF$$
$$\overline{AB} = \overline{DE}$$
$$\overline{AC} = \overline{DF}$$
$$\overline{BC} = \overline{EF}$$

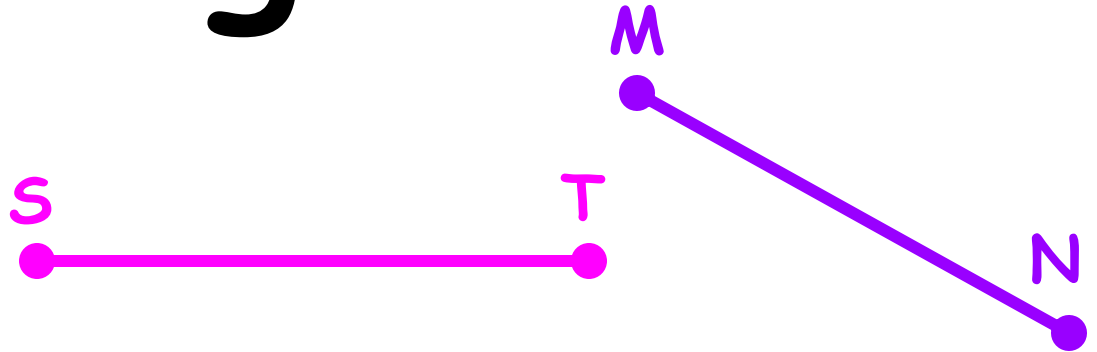
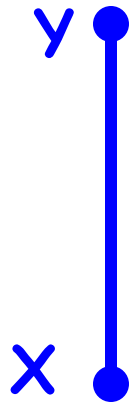
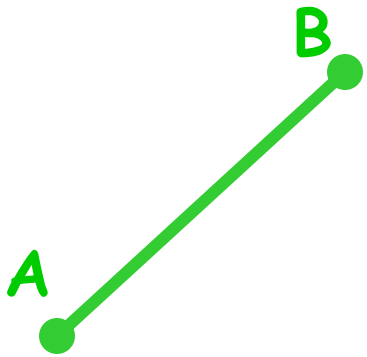




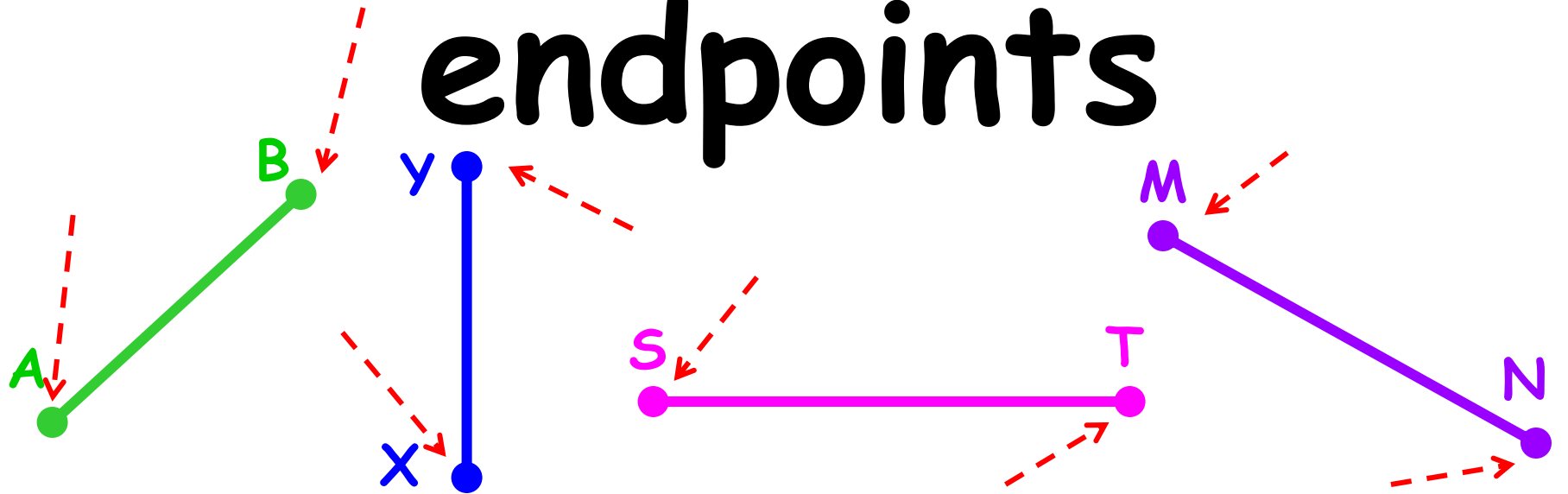
plane \mathcal{R}

plane

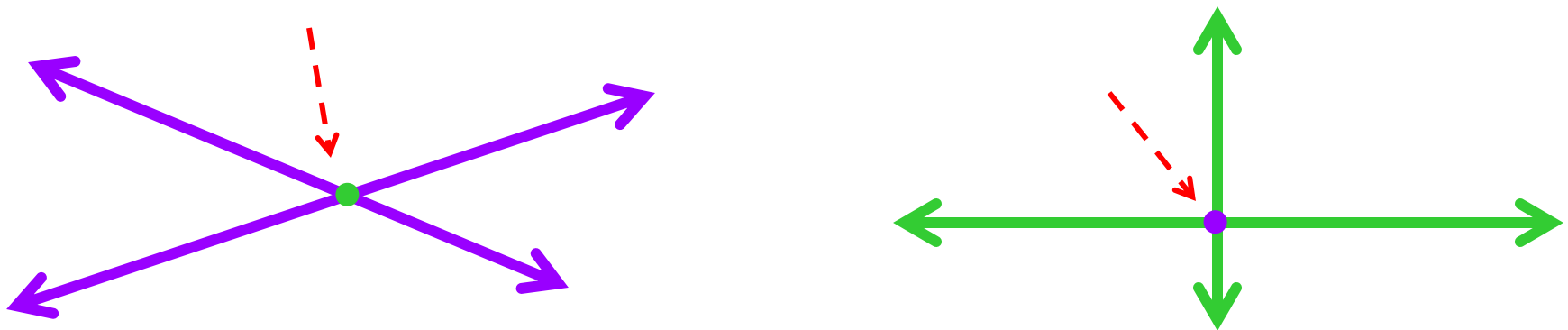
line segment



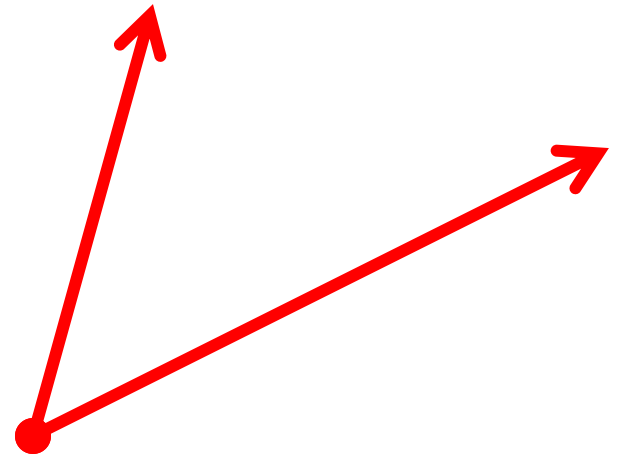
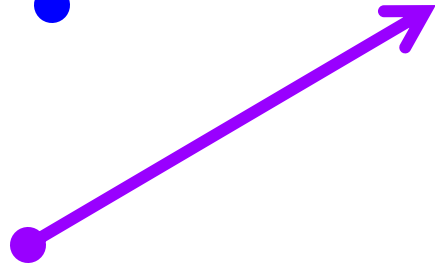
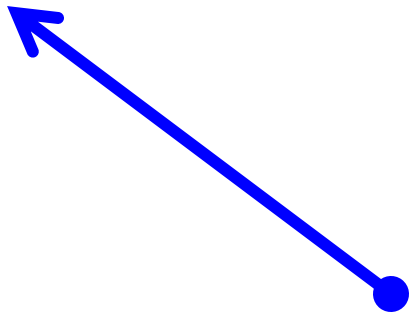
endpoints



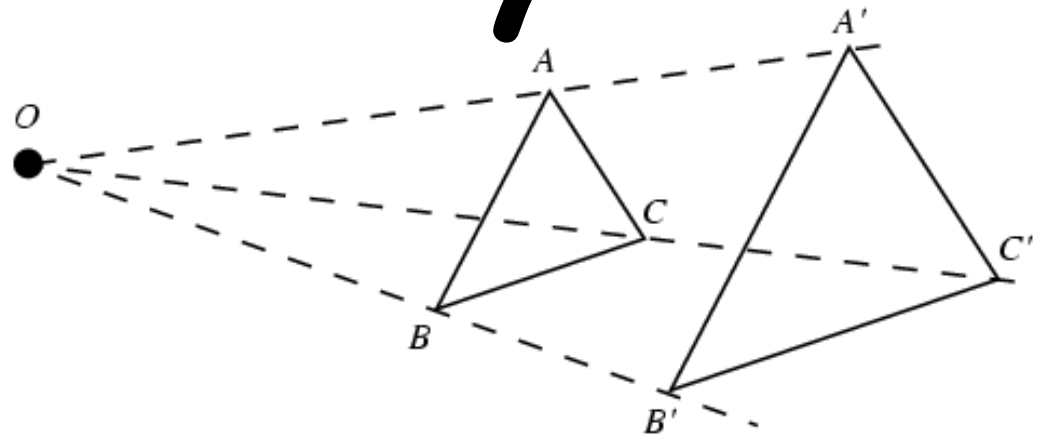
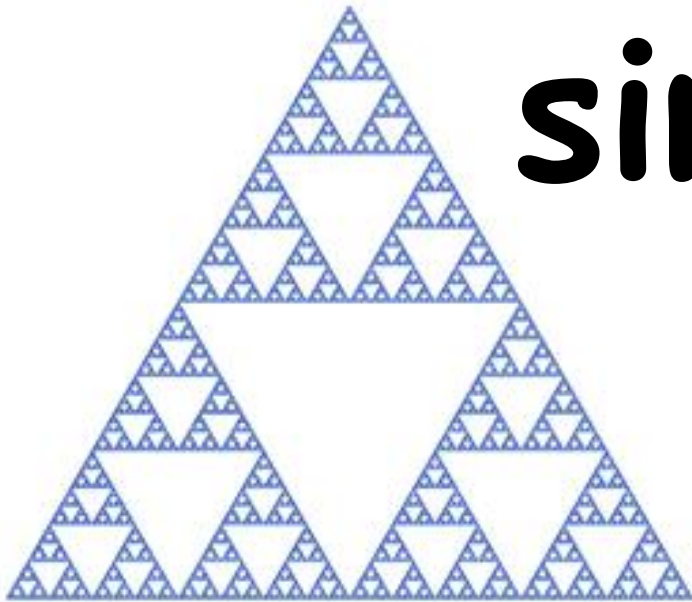
intersection



ray



similarity



rate

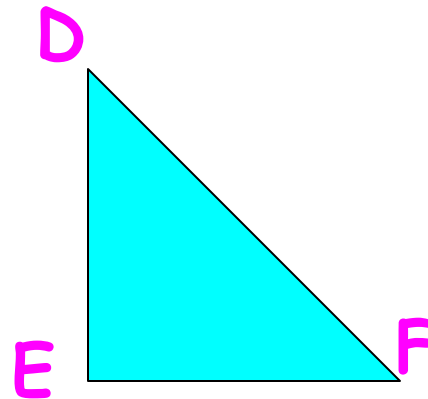
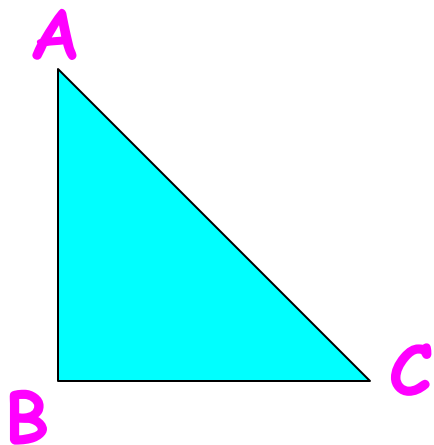
miles per hour

gallons per minute

meters per second

price per pound

corresponding sides



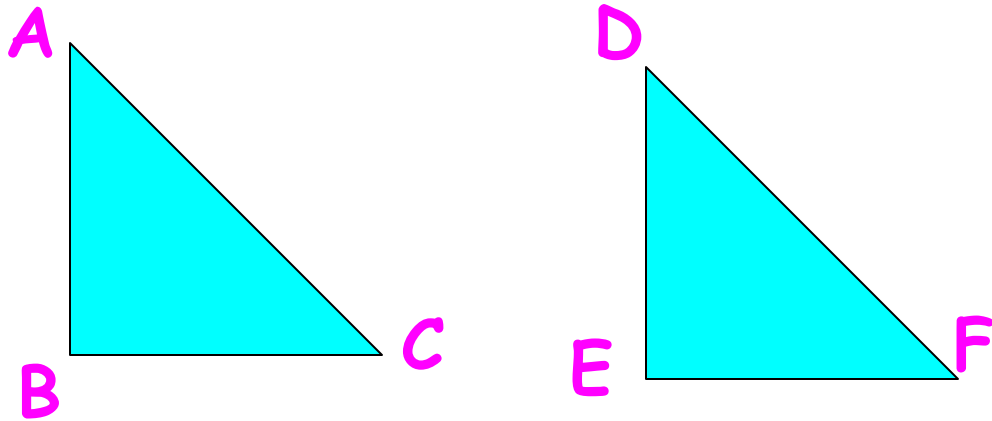
$$\triangle ABC \cong \triangle DEF$$

AB and DE

AC and DF

BC and EF

corresponding angles

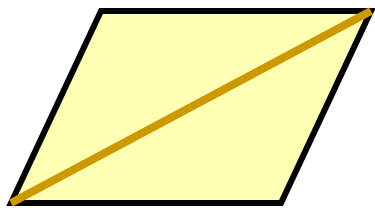


$$\triangle ABC \cong \triangle DEF$$

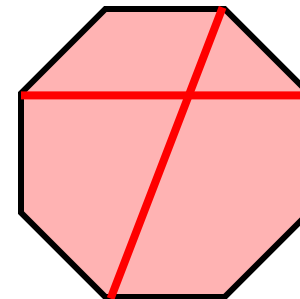
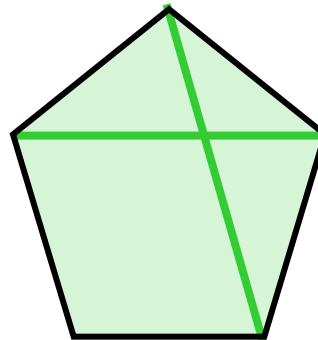
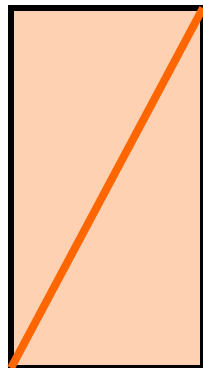
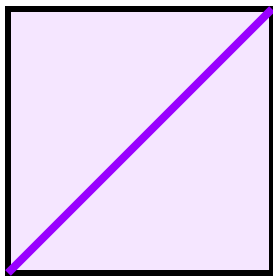
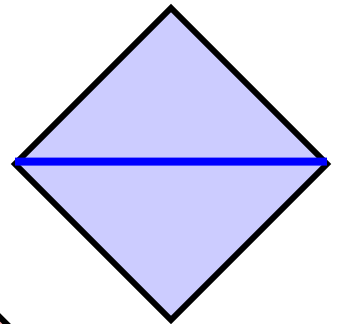
$$\angle ABC = \angle DEF$$

$$\angle ACB = \angle DFE$$

$$\angle BAC = \angle EDF$$



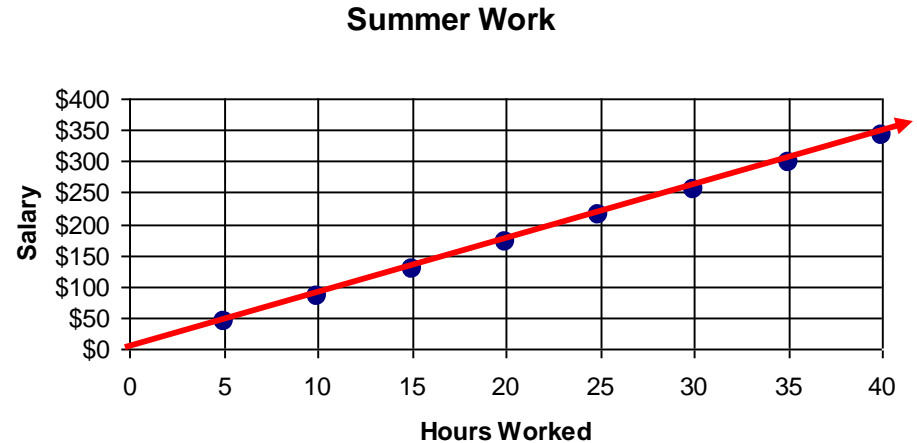
diagonal



direct variation

$$y = kx$$

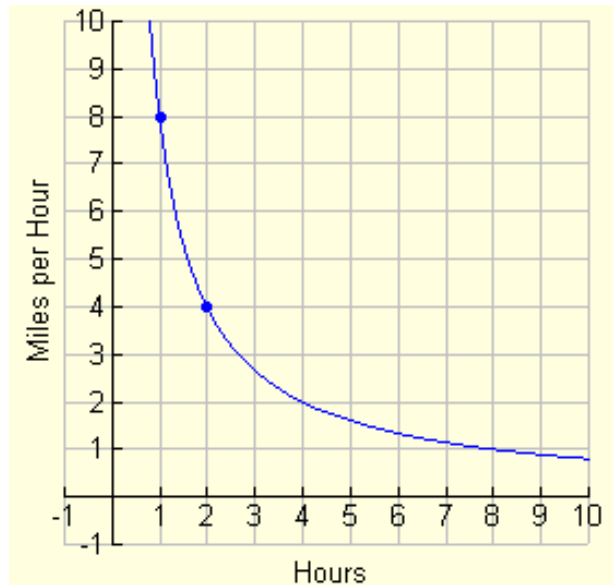
As hours worked increases,
salary increases.



inverse variation

$$y = \frac{k}{x}$$

As speed decreases,
time increases.



inversely proportional

speed and time - the faster you go, the less time it takes to get there

workers and time - the more workers you have, the less time it takes to complete the job

equal distribution


mean

90

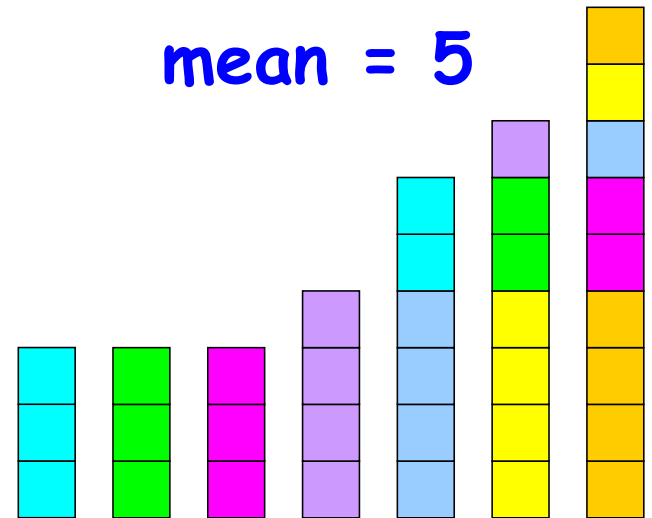
92

93

97

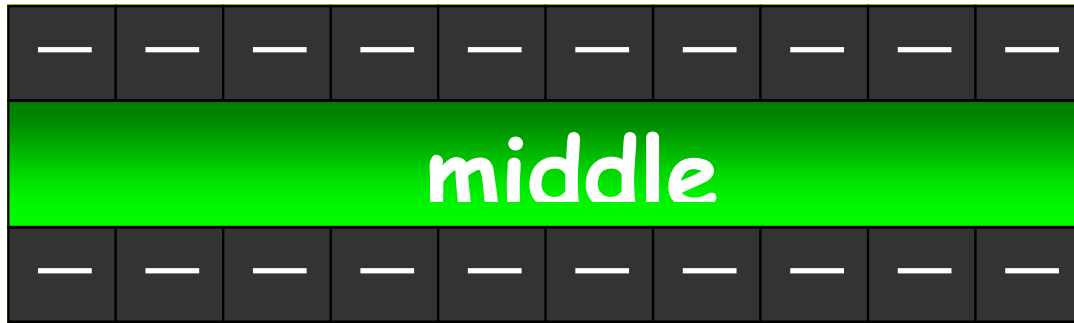

mean = 93

mean = 5



median

3
3
3
4
6
7
9



3
3
4
6
7
9

mode

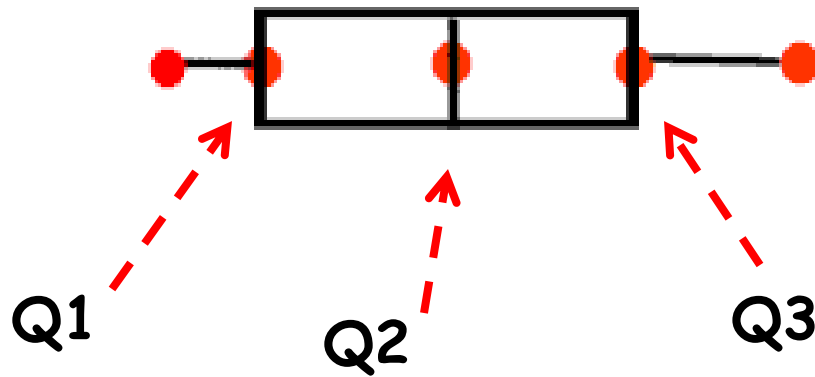
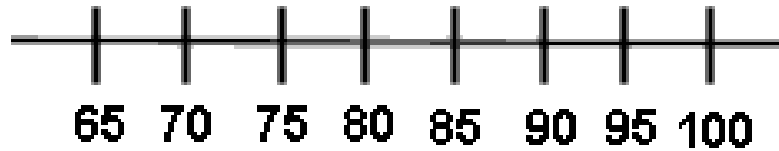
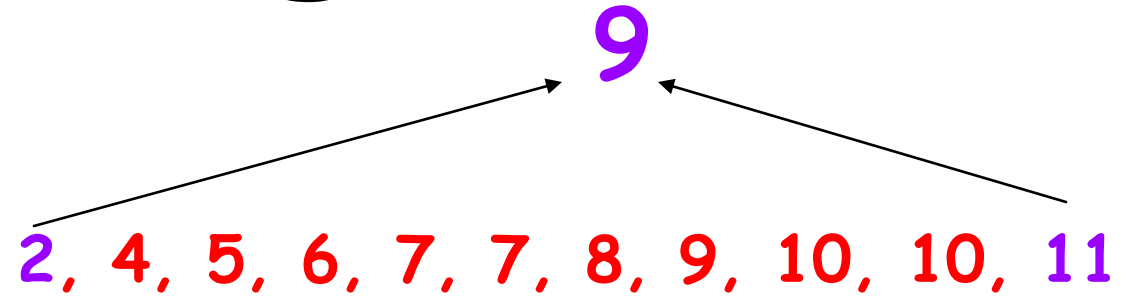
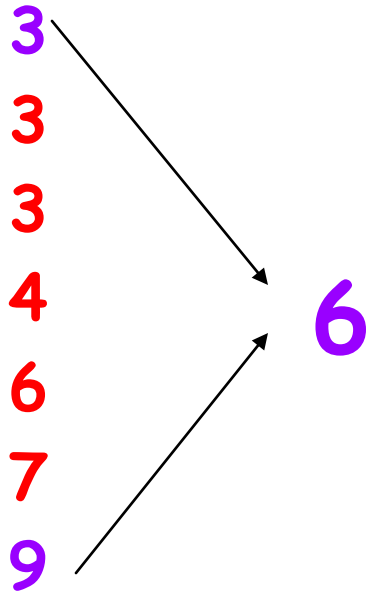
3
3
3
4
6
7
9

3

7 and 10

2, 4, 5, 6, 7, 7, 8, 9, 10, 10, 11

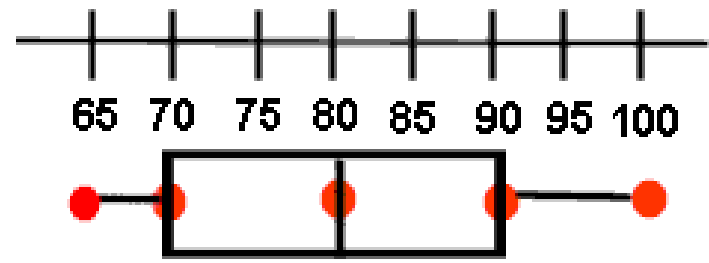
range



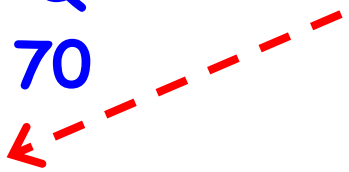
quartile

interquartile

range

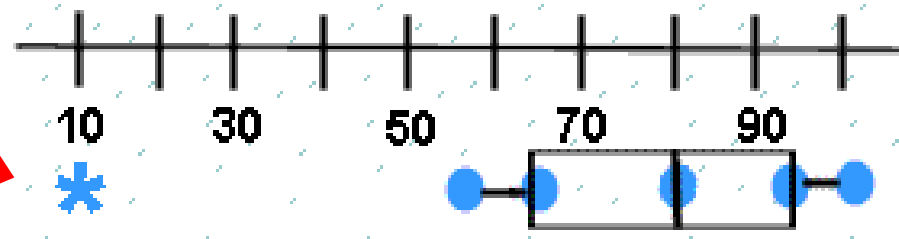


$$\begin{aligned} \text{IQR} &= Q3 - Q1 \\ &= 90 - 70 \\ &= 20 \end{aligned}$$



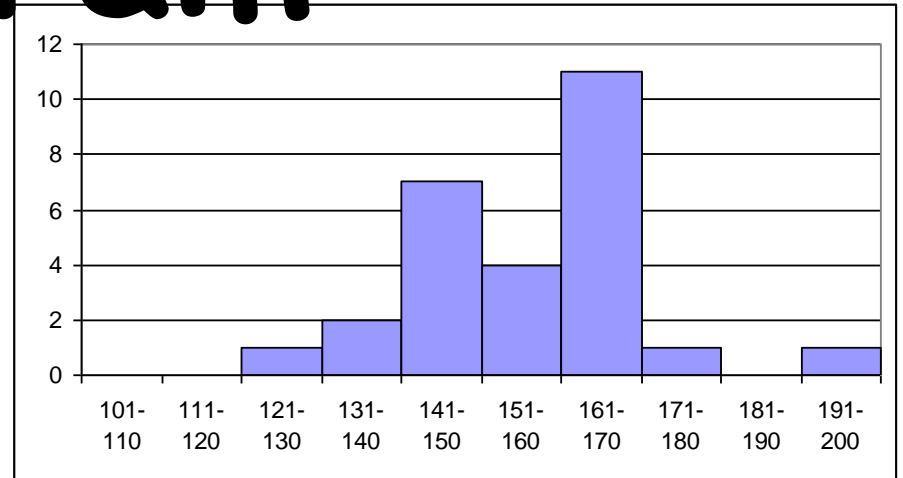
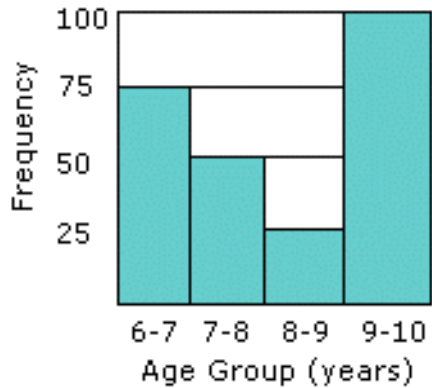
outlier

Test Scores

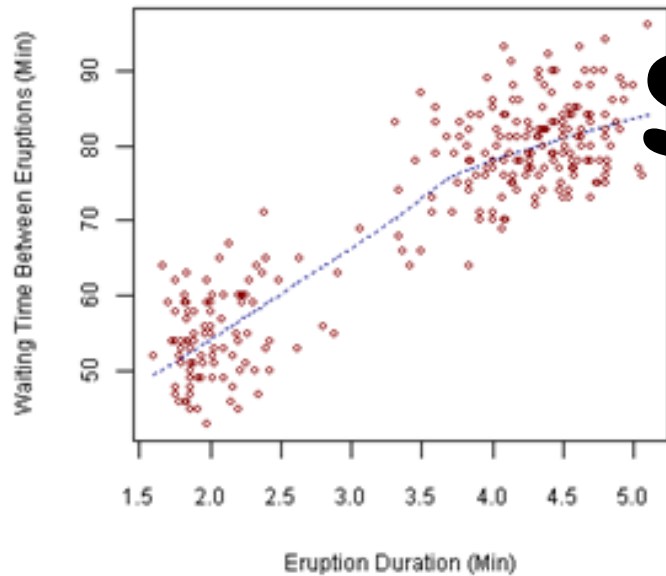


histogram

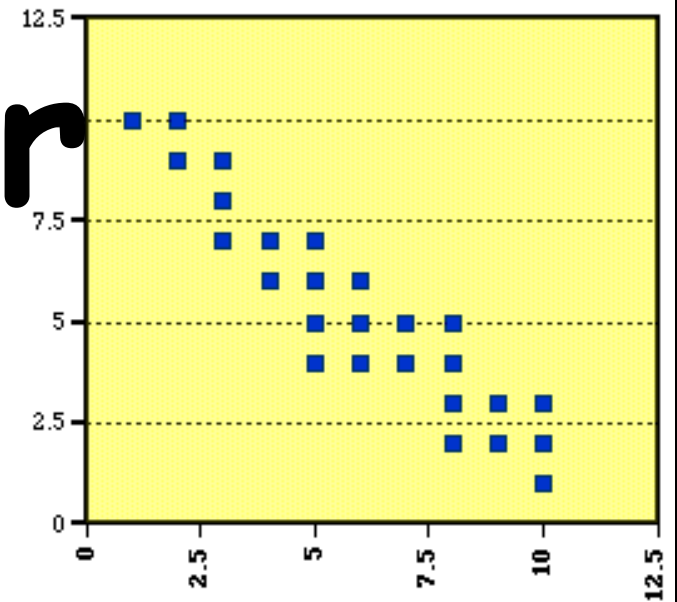
Number of Children Visited a Zoo



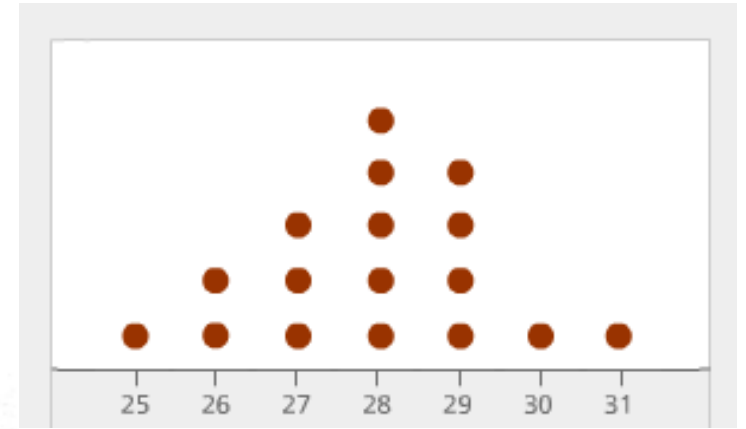
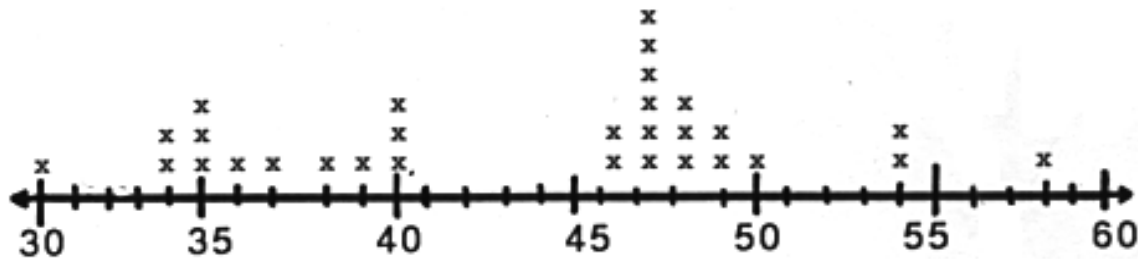
Old Faithful Eruptions



scatter plot



line plot



M&Ms per bag

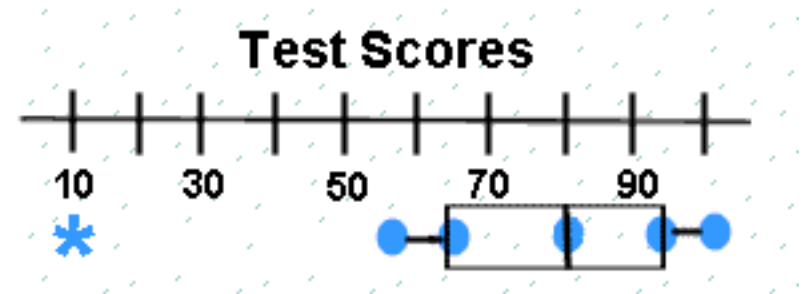
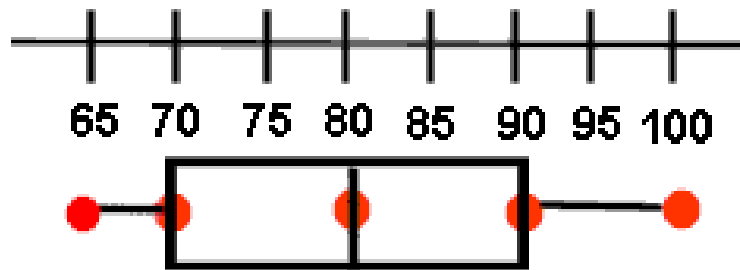
≈

approximately equal to

1 in ≈ 2.5 cm

1 m ≈ 1 yd

box-and-whisker plot



indirect proportion

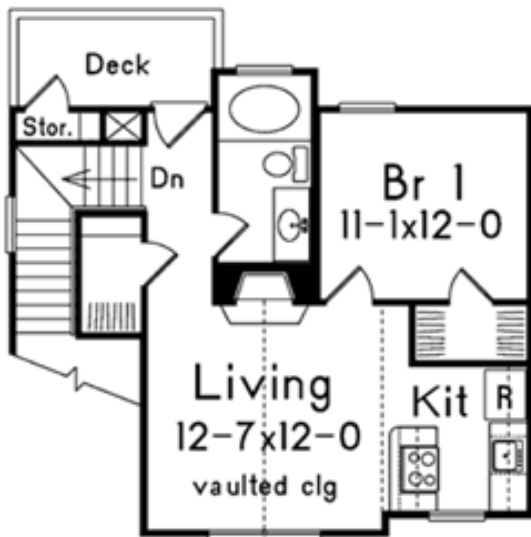
$$y = \frac{60}{x}$$

x	y
2	30
3	20
5	12
10	6

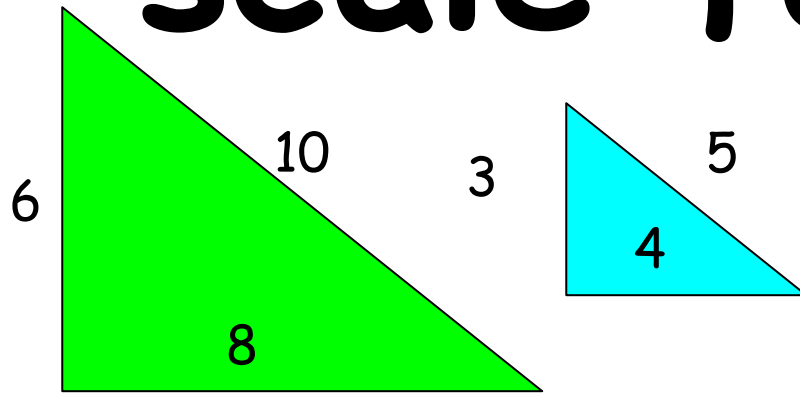
$$y = \frac{36}{x}$$

x	y
2	30
3	20
5	12
10	6

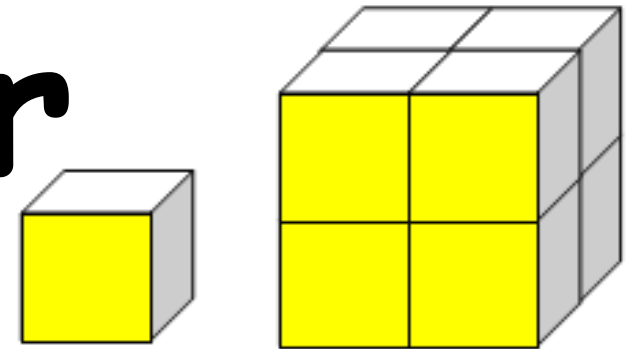
scale drawing



scale factor



Scale factor is 2 or 2:1



Length - scale factor is 2

Area - scale factor is 4

Volume - scale factor is 8