

Glossary

A

accuracy

- the degree to which a measurement is measured and reported correctly

acute angle

- an angle that is greater than 0° and less than 90°

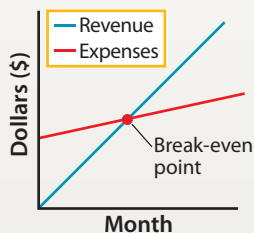
acute triangle

- a triangle with three acute interior angles (between 0° and 90°)

B

break-even point

- when expenses and revenue are equal



C

centre of rotation

- the point about which an object is rotated

cosine law

- a law that relates all three side lengths of a triangle with the cosine of one of the angles

D

data set

- a collection of related information

dependent variable

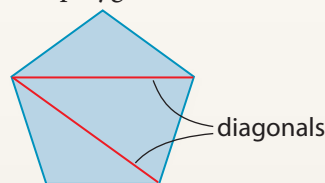
- the result when the independent variable is changed
- graphed on the y -axis

depreciation

- the value that an item loses over time
- the average car depreciates about 15% to 20% per year
- car depreciation usually slows down after year five

diagonal

- a line segment connecting two non-adjacent vertices in a polygon



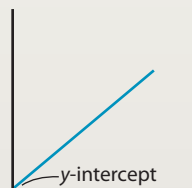
dilation

- a transformation in which a figure is enlarged or reduced by a constant factor



direct variation

- a linear relationship in which one variable is always a fixed multiple of the other variable, e.g., the y -value is always 3 times the x -value
- in a graph of a direct variation relationship, the slope of the line is the fixed multiple, and the y -intercept is always zero



E

equilateral triangle

- a triangle with equal side lengths

expenses

- the money spent running a business
- examples are wages, advertising, and rent

experimental probability

- a ratio that compares the number of times an event occurs to the total number of trials or tests
- determined by experiment

extended warranty

- a service contract between the vehicle owner and warranty provider
- covers specific maintenance and repairs for the vehicle after the manufacturer's warranty expires

F

fixed costs

- costs that do not change from month to month
- have to be paid regardless of how much the vehicle is used
- examples are licence fees and insurance

I

image

- the final shape and/or position of a figure after transformation

independent variable

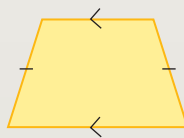
- the variable being changed
- graphed on the x -axis

initial value

- the value of the dependent variable when the independent variable is zero
- in a direct variation relationship, the initial value is always zero

isosceles trapezoid

- a four-sided figure with one set of sides parallel and the other set of sides equal in length



isosceles triangle

- a triangle with two equal side lengths

L

lease

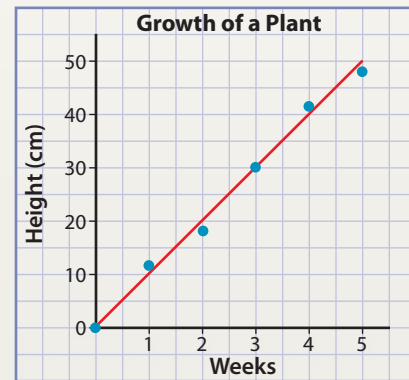
- a type of financing in which you pay for a vehicle for a specified amount of time
- at the end of the term you can return the vehicle to the dealer or buy the vehicle for a previously set price

lessee

- the customer leasing the vehicle from the car dealership

line of best fit

- a straight line that represents a trend in a scatter plot that follows a linear pattern. For example,



line of reflection

- a line that an object is reflected over
- the corresponding points on both sides of the line are the same distance away from the line

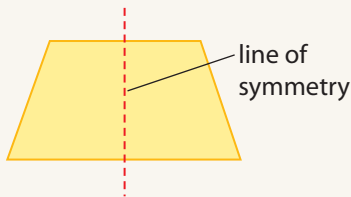
line symmetry

- a line of symmetry in which an image or object can be divided into two identical halves by a line of symmetry



line of symmetry

- a line that divides a figure into two identical halves
- sometimes called a line of reflection or axis of symmetry



linear relationship

- a direct relationship between the y -coordinate and the x -coordinate
- all the points on a graph of a linear relation lie along a straight line

linear trend

- a trend in which the relationship between two variables follows a linear pattern:
 - The trend is positive when one variable increases as the other variable also increases.
 - The trend is negative when one variable increases as the other variable decreases.

loss

- when a company's expenses are more than its revenues

M

mean

- the average of the data values
- add the data values and divide the total by the number of data values
- Example: The mean of 4, 7, 9, 10, 11, 15 is

$$\frac{4 + 7 + 9 + 10 + 11 + 15}{6} = \frac{56}{6} = 9.3$$

measure of central tendency

- a value that represents the centre of a set of data
- can be the mean, median, or mode

median

- the middle number in a set of data after the data have been arranged in order
- the median of 2, 4, 6, 8, 11 is 6
- when there is an even number of data values, average the two middle values to find the median
- Example: the median of 1, 5, 9, 13, 16, 20 is 11, because $\frac{9 + 13}{2} = \frac{22}{2} = 11$

mode

- the number(s) that occurs most frequently in a set of data
- a data set can have no mode, one mode, or more than one mode

N

net income

- a company's total profit or loss after subtracting expenses from revenue
- net income = revenue – expenses

non-linear relationship

- no direct relationship between the y -coordinate and the x -coordinate
- the points on a graph of a non-linear relationship do not lie along a straight line

O

oblique triangle

- a triangle that does not contain a right angle; it can be acute or obtuse

obtuse angle

- an angle that is greater than 90° and less than 180°

obtuse triangle

- a triangle with one obtuse interior angle (between 90° and 180°)

odds

- a ratio that compares the number of possible successful outcomes to the number of possible unsuccessful outcomes

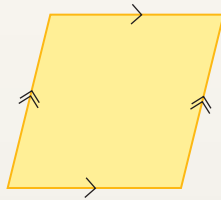
outlier

- a value that is much smaller or larger than the other data values
- a data set may have no outliers, one outlier, or more than one outlier

P

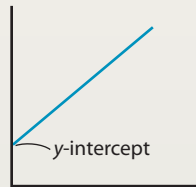
parallelogram

- a four-sided figure with two pairs of parallel sides



partial variation

- one variable in a linear relationship is a fixed multiple of the independent variable plus a constant amount, e.g., the y -value is always 3 times the x -value plus 2
- in a graph of a partial variation relationship, the constant amount is the y -intercept and the fixed multiple is the slope of the line



percentile

- a value below which a certain percent of the data set falls
- the median is also called the 50th percentile, because 50% of the values in the data set are below the median value

percentile rank

- a number between 0 and 100 that indicates the percent of cases that fall at or below that score

precision

- the degree of exactness to which a measurement is expressed
- the precision of a measurement depends on the scale of the instrument used

probability

- the mathematical likelihood of something happening
- a ratio that compares the number of possible successful outcomes to the total number of possible outcomes

profit

- when a company's revenues are more than its expenses

R

range

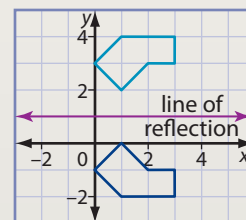
- the difference between the largest value and the smallest value of a data set

rate of change

- the amount by which the dependent variable changes when the independent variable increases by 1 unit
- in a direct variation relationship, the rate of change is constant

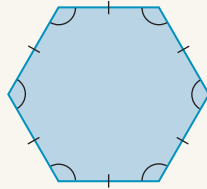
reflection

- a transformation in which an object is shown as its mirror image over a line of reflection



regular polygon

- a closed figure with three or more straight sides and equal side and angle measurements



residual value

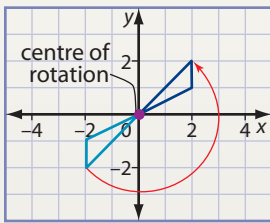
- the estimated value of the car at the end of the lease
- determined by the car dealership when the lease is signed

revenue

- income from normal business activities, usually the sale of goods and/or services

rotation

- a transformation that moves an object around a fixed point that is called the centre of rotation



S

scale factor

- the constant factor by which all dimensions of an object are enlarged or reduced
- Example: the dimensions of this rectangle are multiplied by 3, so the scale factor is 3

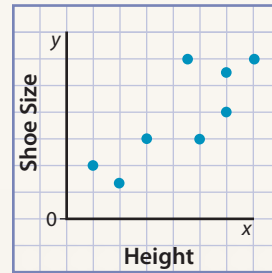


scalene triangle

- a triangle with no equal sides

scatter plot

- a graph of plotted points that shows the relationship between two data sets
- Example: Each dot represents one person's height versus shoe size.



sine law

- the sides of a triangle are proportional to the sines of the opposite angles

stem-and-leaf plot

- a way to organize numerical data in order of place value
- the "tens digit and greater" is the stem and the "ones digit" is the leaf
- Example: a stem-and-leaf plot for 2, 15, 18, 29 is

Stem (tens)	Leaf (ones)
0	2
1	5 8
2	9

- to plot decimal numbers, the "ones digit and greater" is the stem and the "tenths and less" is the leaf
- Example: a stem-and-leaf plot for 0.8, 2.1, 2.7 10.8 is

Stem (ones and greater)	Leaf (tenths and less)
0	8
2	1 7
10	0

successive translation

- a pattern created by translating a figure multiple times using the same translation

T

tessellate

- to cover an area using the repetition of geometric shapes, with no overlaps and no gaps

tolerance

- the total amount that a measurement is allowed to vary

theoretical probability

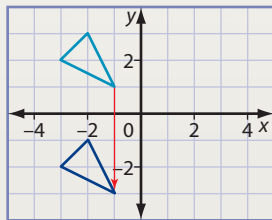
- a ratio that compares the number of possible successful outcomes to the total number of possible outcomes
- determined by reason or calculation

transformation

- a change in a figure that results in a new position or size
- Examples: dilations, translations, reflection, rotations

translation

- a transformation that slides an object in a straight line without changing its size or orientation



tree diagram

- a type of organizer for displaying outcomes of an event
- each branch represents a different possible outcome

trend

- the general direction in which values in a set of data tend to move

trimmed mean

- a calculation of the mean found by removing the highest and lowest values
- you must remove the same number of values from the top and bottom of the data set
- removing outliers can result in a more accurate mean

V

variable costs

- costs that change in amount or in how frequently they are paid
- examples are gas, tires, and maintenance
- the distance you drive, climate, your driving style, and maintenance affect the variable costs

W

weighted mean

- the average or mean of a data set in which each data point does not contribute an equal amount to the final average

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