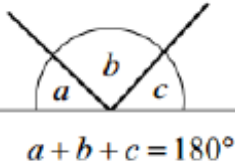


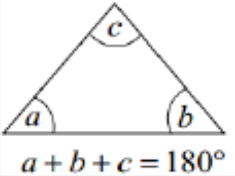
Angles at a point add up to 360° .



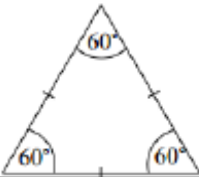
Angles on a straight line add up to 180° .



The interior angles in any triangle add up to 180° .

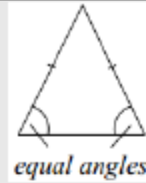


The interior angles in an equilateral triangle are all 60° .

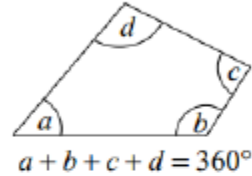


Angle	Vertically Opposite
Alternate	Perpendicular
Supplementary Co-interior	Parallel lines
Acute/Obtuse/ Reflex	Corresponding

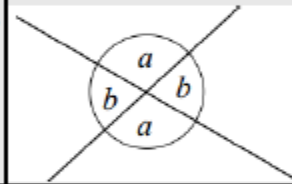
An isosceles triangle has two angles of the same size.



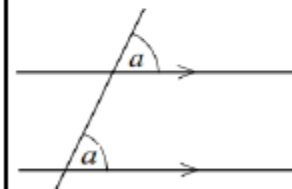
The interior angles in any quadrilateral add up to 360° .



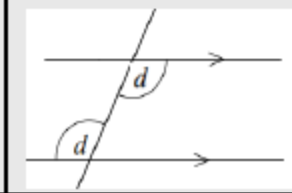
When two straight lines intersect, the opposite angles are equal.



When a straight line intersects a pair of parallel lines, the corresponding angles are equal.



When a straight line intersects a pair of parallel lines, the alternate angles are equal.



Videos

[Names of angle](#)

[Angles in a triangle](#)

Angles on a [line](#)/ [around a point](#)

[Angles and parallel lines](#)

[Properties of special triangles](#)

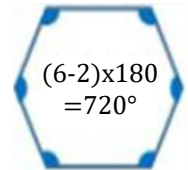
Key facts to memorise – polygon angle facts

Polygon Names

3 sides	Triangle
4 sides	Quadrilateral
5 sides	Pentagon
6 sides	Hexagon
7 sides	Heptagon
8 sides	Octagon
9 sides	Nonagon
10 sides	Decagon

Polygon Angle Facts

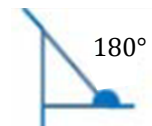
Sum of interior angles in a polygon with n sides
 $= (n-2) \times 180$



Sum of exterior angles in a polygon
 $= 360^\circ$



Interior angle + exterior angle
 $= 180^\circ$



MEAN

$$\frac{\text{sum of all values}}{\text{number of values}}$$

MEDIAN

Middle value when numbers are placed in order

MODE

Most Common

RANGE

Largest value - smallest value

Practice:

Find the mean, median, mode and range of the following set of numbers

1, 3, 2, 8, 7, 9, 5, 4, 10, 2, 4

Challenge Question:

12	6	15	?
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The mean of these 4 cards is 10, what is the missing number?

Averages and Range from a Frequency Table

20 Students scored goals for the school hockey team last month. The table gives information about the number of goals they scored.

Goals Scored	Number of Students	Goals Scored \times No. of Students
1	9	$1 \times 9 = 9$
2	3	$2 \times 3 = 6$
3	5	$3 \times 5 = 15$
4	3	$4 \times 3 = 12$
	20 Students	42 Goals Scored

This means 9 students each scored 1 goal

Add a 'totals' row to work out the total number of student and total goals scored

Add an extra column to work out the number of goals scored

Mean = total number of goals scored divided by the number of students
 $= 42 \div 20 = 2.1$ goals per student

Mode = most common number of goals scored
 $= 1$ (as 9 students scored 1 goal which is more than any other number of goals)

Median = the number in the middle = 2
 If I wrote the goals scored by each student as a list it would look like:

1, 1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4,

9 students scored 1 goal each

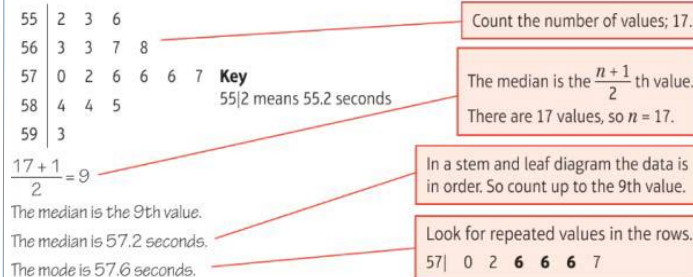
3 students scored 4 goal each

The **median** is the middle number now that they are in order

Range of the number of goals scored $= 4 - 1 = 3$

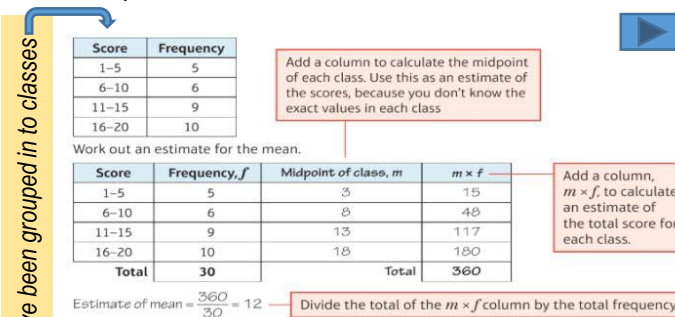
Stem and Leaf Diagrams

This stem and leaf diagram shows the times, in seconds, for a group of swimmers to swim 100m. Find the median and the mode.



Estimating the mean from a grouped frequency table

The table represents the scores of 30 students in a maths test:



This is only an **ESTIMATE** for the mean as we are estimating the scores of the students by using the midpoint

Practice Question:

Real In a survey, 30 small companies were asked how many employees they had. This table shows the results.

Number of employees	Frequency, f	Midpoint of class, m	$m \times f$
1-5	12		
6-10	7		
11-15	6		
16-20	5		
Total			Total

Calculate an estimate for the mean number of employees per company.