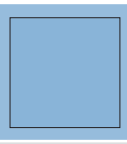
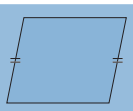
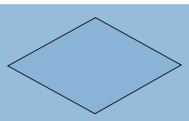
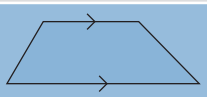
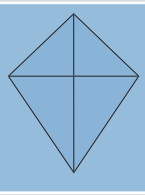
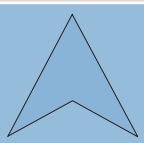
## 5.5 Quadrilaterals

A quadrilateral is a polygon with four straight sides and four angles.

The angles of a quadrilateral add up to 360°.

There are eight different types of quadrilateral and each one has its own name and properties:

|  | |  |  |
|---|---|---|---|
| **Square**<br><br>All sides are the same length.<br>All angles are the same size (90°).<br>Opposite sides are parallel. | **Rectangle**<br><br>Opposite sides are the same length.<br>All angles are the same size (90°).<br>Opposite sides are parallel. | **Parallelogram**<br><br>Opposite sides are the same length and parallel.<br>Opposite angles are the same size. | **Rhombus**<br><br>All sides are the same length.<br>Opposite sides are parallel.<br>Opposite angles are the same size. |
| |  |  |  |
| **Isosceles trapezium**<br><br>One pair of parallel sides.<br>Base angles are the same size. | **Trapezium**<br><br>One pair of parallel sides. | **Kite**<br><br>Two pairs of sides are the same length.<br>One pair of equal angles. | **Arrowhead**<br><br>Two pairs of sides are the same length.<br>One reflex angle.<br>One pair of equal angles. |

Arrowheads are special as they are **concave**.
All the other quadrilaterals are **convex**.

## 5.6 Polygons with more than four sides

'Polygon' is the name for any shape that is drawn with straight sides.

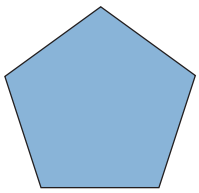
A **regular** polygon has equal sides and equal angles.

In Geometry 'equal' means the same size or the same length.
The names of the polygons come from Greek or Latin words:

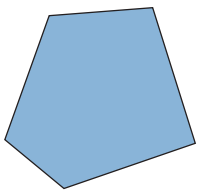
**KEY WORD**

**Regular** a polygon is regular if all its angles are the same size and all its sides are the same length

| Number of sides of the polygon | Number | Latin name of the number | Greek name of the number | Name of Polygon |
|---|---|---|---|---|
| 3 | 3 | Tres | Tria | Triangle |
| 4 | 4 | Quattuor | | Quadrilateral |
| 5 | 5 | | Pente | Pentagon |
| 6 | 6 | | Hexi | Hexagon |
| 7 | 7 | | Hepta | Heptagon |
| 8 | 8 | Octo | Octo | Octagon |
| 9 | 9 | Novem | | Nonagon |
| 10 | 10 | Decem | Deca | Decagon |
| 12 | 12 | Duodecem | Dodeca | Dodecagon |
| 20 | 20 | | Ikosi | Icosahedron |



Regular pentagon



Irregular pentagon