

Y7 Maths Knowledge Organiser Topic 13: Constructions and classifying 2D shapes

What must I be able to do?

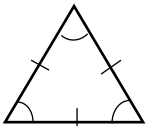
- Classify triangles and quadrilaterals according to their properties
 - Sparx M276
- Use a ruler and protractor to construct triangles and quadrilaterals from given data. Extend to construction of hexagons, pentagons etc. Can also include other constructions such as right angles etc.
- Draw and measure acute and obtuse angles reliably to the nearest degree
 - Sparx M331
- Estimate the size of any given angle
 - Sparx M541
- Solve problems involving coordinates in all four quadrants
 - Sparx Q761

Key vocabulary

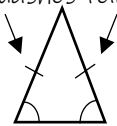
Classify	Decide a category that something belongs to.
Construct	Draw something accurately.
Coordinate	Position on a grid written as (x, y) .
Quadrant	One of the <u>four</u> parts of a <u>coordinate grid</u> .
Compass	Mathematical instrument that can be used to <u>draw circles</u> or parts of circles.
Protractor	Mathematical instrument used to <u>measure angles</u> .
Vertex	A corner <u>where edges meet</u> . The plural is vertices.

Triangle properties

The dashes tell you which sides are equal!



Equilateral



Isosceles

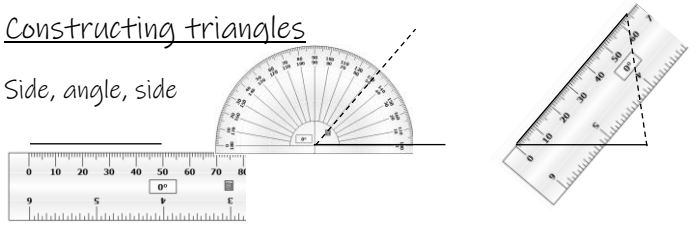


Scalene

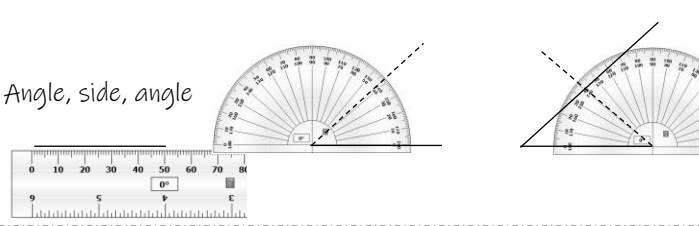
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|--|--|---|
| <ul style="list-style-type: none"> • 3 equal sides • 3 equal angles • 3 lines of symmetry | <ul style="list-style-type: none"> • 2 equal sides • 2 equal base angles • 1 line of symmetry | <ul style="list-style-type: none"> • no equal sides • no equal angles • no lines of symmetry |
|--|--|---|

Constructing triangles

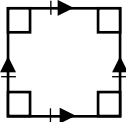
Side, angle, side



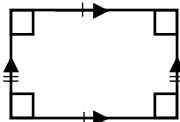
Angle, side, angle



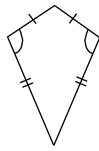
Quadrilateral properties



Square

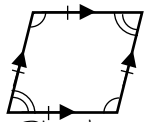


Rectangle

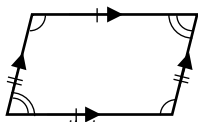


Kite

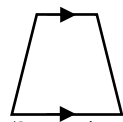
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|---|--|--|
| <ul style="list-style-type: none"> • 4 equal sides • Opposite sides are parallel • 4 right angles • 4 lines of symmetry | <ul style="list-style-type: none"> • Opposite sides are equal • Opposite sides are parallel • 4 right angles • 2 lines of symmetry | <ul style="list-style-type: none"> • 2 pairs of equal sides • 2 equal angles • 1 line of symmetry |
|---|--|--|



Rhombus

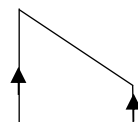


Parallelogram



Trapezium

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> • 4 equal sides • Opposite sides are parallel • Opposite angles are equal • 2 lines of symmetry | <ul style="list-style-type: none"> • 2 pairs of equal sides • Opposite sides are parallel • Opposite angles are equal • No lines of symmetry | <ul style="list-style-type: none"> • One pair of parallel sides |
|--|--|--|



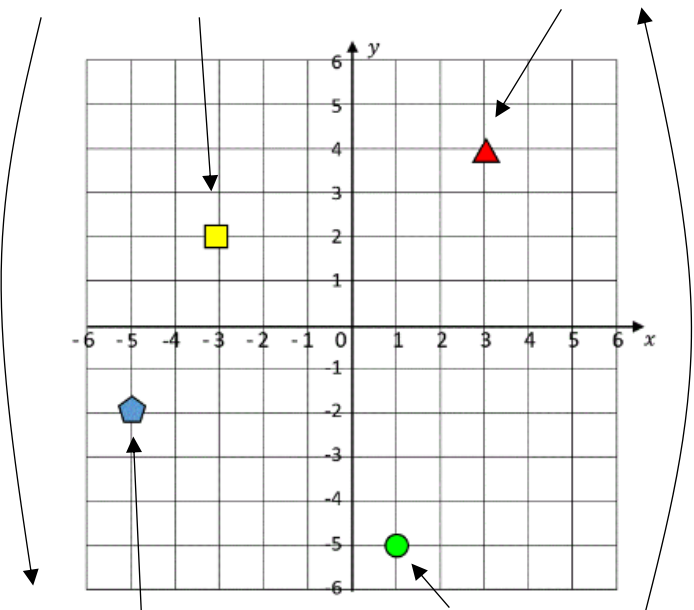
Coordinates in 4 quadrants

2nd quadrant. x is negative and y is positive

1st quadrant. x and y are both positive

Coordinate = $(-3, 2)$

Coordinate = $(3, 4)$



3rd quadrant. x and y are both negative

4th quadrant. x is positive and y is negative

Coordinate = $(-5, -2)$

Coordinate = $(1, -5)$