



Year 7 higher topic 5

Angles and shapes

What careers would use these skills?

Architect, builder, landscape gardener, artist, interior designer, computer game designer, snooker player, diver, graphic designer

Interior angles of polygons

For the sum of the interior angles in a regular polygon:

$$\text{sum} = 180(n - 2)$$

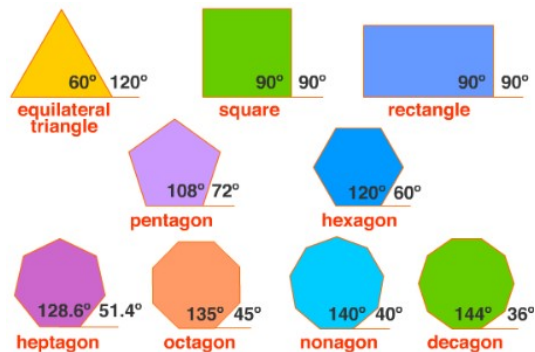
For the size of each interior angle in a regular polygon:

$$\text{angle} = \frac{180(n - 2)}{n}$$

where n = the number of sides

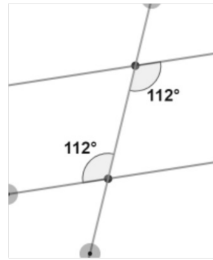
Exterior angles of polygons

They are the angle formed outside a polygon when one side is extended. The sum of exterior angles of a polygon = 360°



Alternate angles (parallel lines)

Alternate angles are equal: they lie on different (alternate) sides of the diagonal

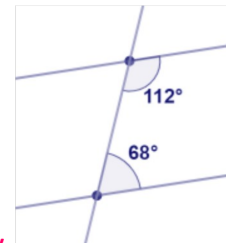


Corresponding angles (parallel lines)

Corresponding angles are on the same (corresponding) sides of the diagonal

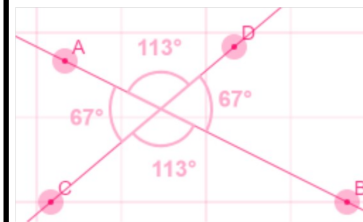
Supplementary angles (parallel lines)

These two angles (112° and 68°) are Supplementary Angles, because they add up to 180°



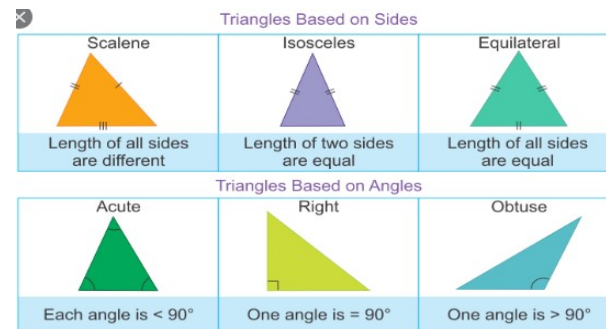
Vertically opposite angles

Vertically opposite angles are equal



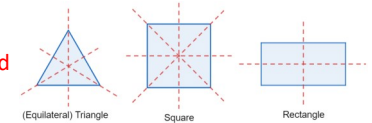
Properties of triangles

Sum of interior angles = 180°



Line of symmetry

The "Line of Symmetry" is the imaginary line where you could fold the image and have both halves match exactly. A regular polygon of " n " sides has " n " Lines of Symmetry



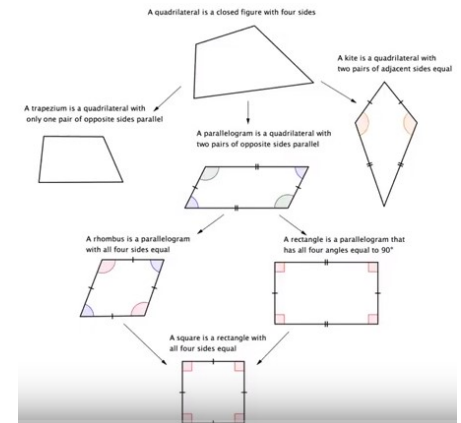
Order of rotational symmetry

The order of rotational symmetry of a shape is determined by how many times the shape fits onto itself during a 360° turn.



Properties of quadrilaterals

Sum of interior angles = 360°



Types of angle

acute angle	right angle	obtuse angle
less than 90°	90°	between 90° and 180°
obtuse angle	straight angle	reflex angle
reflex angle	a revolution	straight angle
between 180° and 360°	360°	180°