Unit 11 – Part 1

Types of Triangles
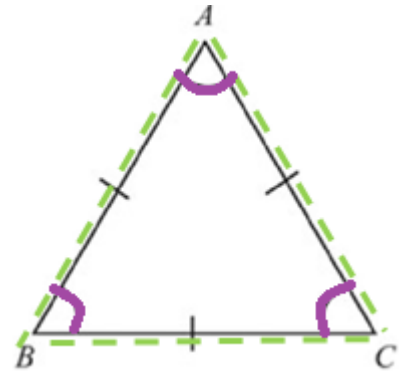
Properties of Triangles

Equilateral Triangle

AB = BC = AC (3 sides are equal in length)
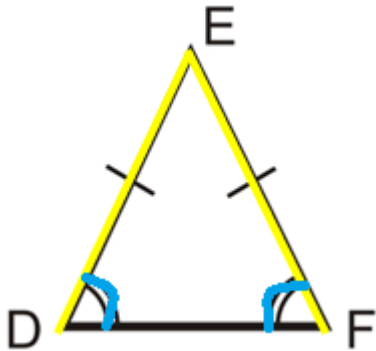
$\widehat{A} = \widehat{B} = \widehat{C}$ (3 angles are equal)

Therefore:

If AC = 5cm then AB and BC are also equal to 5cm

Isosceles Triangle

DE = EF (2 sides are equal in length)

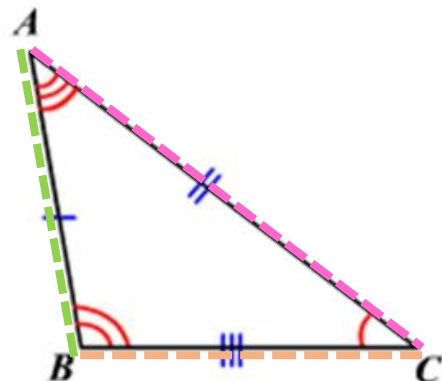$\widehat{D} = \widehat{F}$ (base angles are equal)

Therefore:

If DE = 2cm then EF is also equal to 2cm
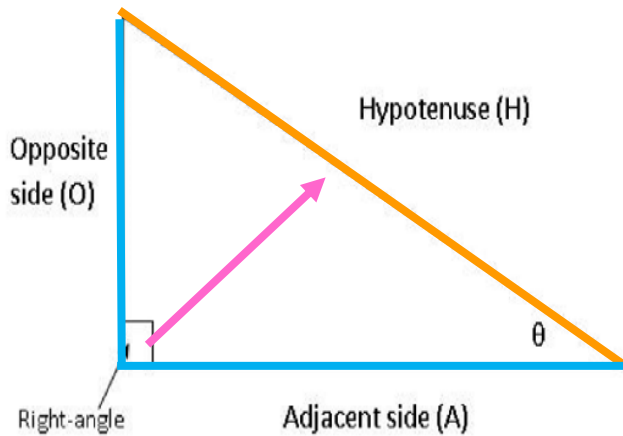
If $\widehat{D} = 45°$ then $\widehat{F} = 45°$

Scalene Triangle

There are no sides that have the same length

There are no angles that are equal

Right-Angled Triangle

Hypotenuse (H)

Opposite side (O)

θ

Right-angle

Adjacent side (A)

The **hypotenuse** is always **diagonally across** from your right angle.

Remember your Pythagoras Theorem

$$a^2 + b^2 = c^2$$
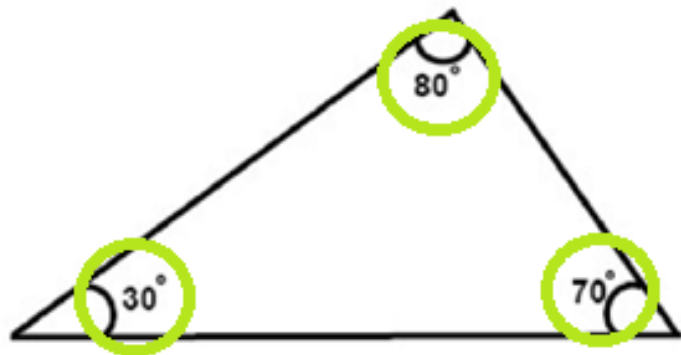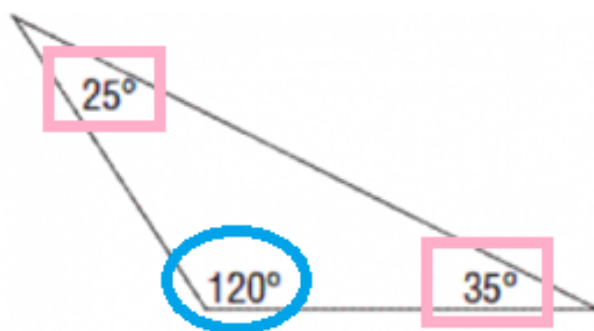$$side^2 + side^2 = hypotenuse^2$$

Acute-Angled Triangle

An acute angle is an angle that is smaller than 90°.

Therefore:

All three angles of the triangle has to be smaller than 90°

80°

30°

70°

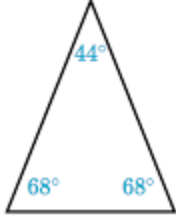## Obtuse-Angled Triangle

25°

120°

35°
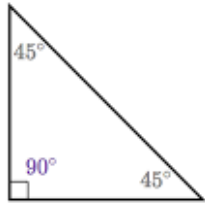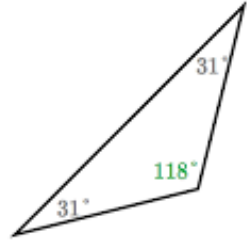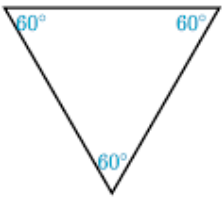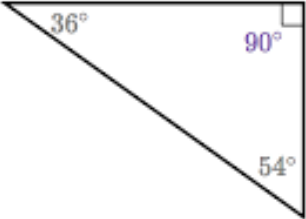
One angle is bigger than 90° but still smaller than 180°.

IMPORTANT
The other two angles can be any size however they will not be the same size otherwise it would be an isosceles triangle.

Exercise

Fill in the table below by stating the type of triangle given as well as the properties of the triangle.

Triangle	Type of Triangle	Properties of the Triangle
E.g. (triangle with 44°, 68°, 68°)	ISOSCELES	Base angles are both 68°
1. (triangle with 45°, 90°, 45°)		
2. (triangle with 31°, 118°, 31°)		
3. (triangle with 60°, 60°, 60°)		
4. (triangle with 36°, 90°, 54°)		
5. (triangle with 42°, 104°, 34°)		