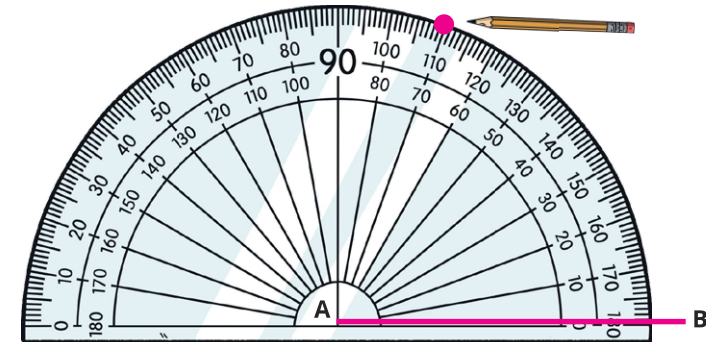


## Measuring and Drawing Angles

Determine whether you need to read from the inner or outer scale by starting from zero.

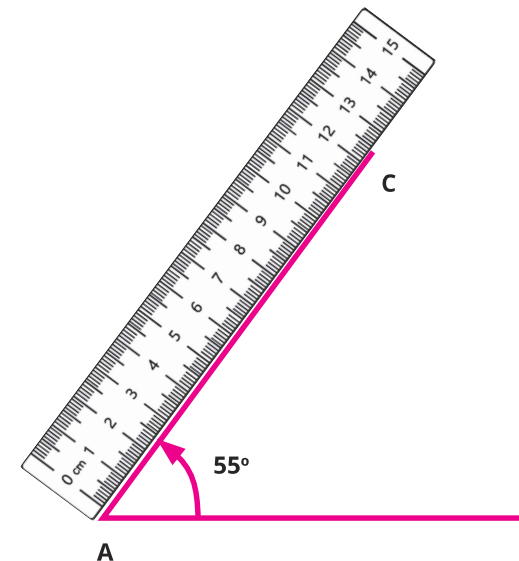
In this diagram, the correct size of the angle is  $70^\circ$  as the opening of the angle is on the left hand side and therefore we need to use the inner numbers as that starts on  $0^\circ$ .

When drawing angles, start with a straight line. Position the protractor so the cross of the protractor is at one end of the line and it lines up with the  $0^\circ$  line.



Making sure you are starting from zero, find the size of the angle you need and draw a dot. In this diagram we are drawing a  $55^\circ$  angle.

Then move the protractor away and join the dot to where you had the centre of the protractor.

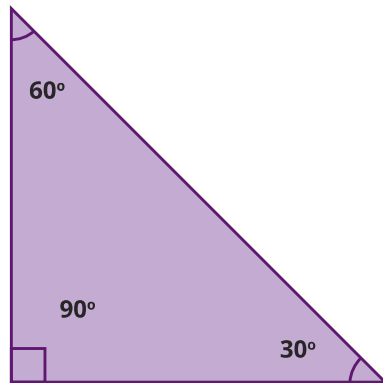


diagrams not to scale

## Angle Rules

## Right Angle Triangle

1. Angles in a triangle always add up to  $180^\circ$ .

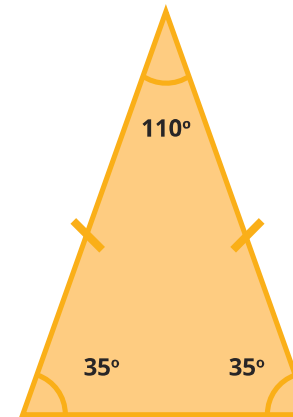


Right angled

One right angle

$$90 + 60 + 30 = 180^\circ$$

## Isosceles Triangle

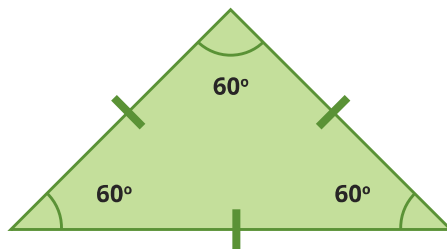


Isosceles

Two equal sides and two equal angles

$$35 + 35 + 110 = 180^\circ$$

## Equilateral Triangle

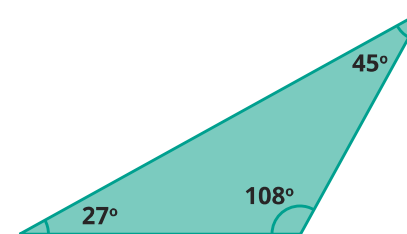


Equilateral

Three equal sides and three equal angles

$$60 + 60 + 60 = 180^\circ$$

## Scalene Triangle



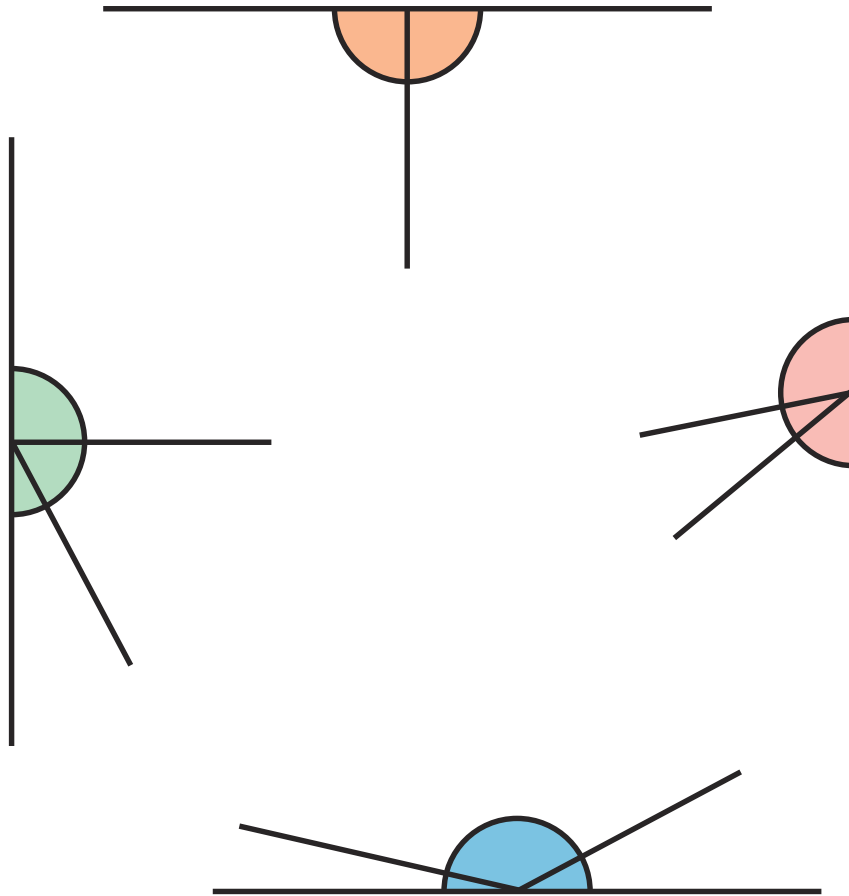
Scalene

All sides and angles different

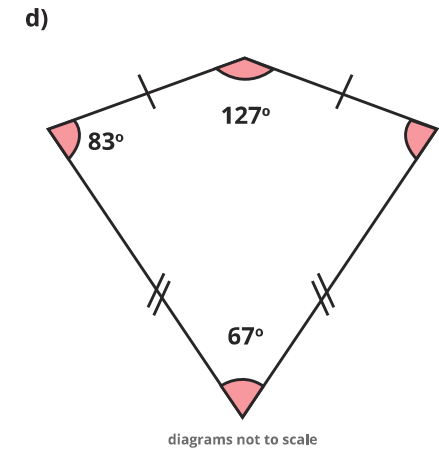
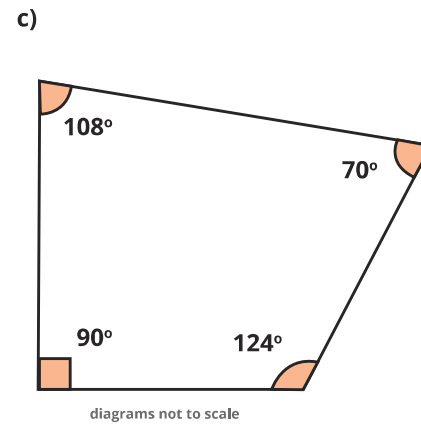
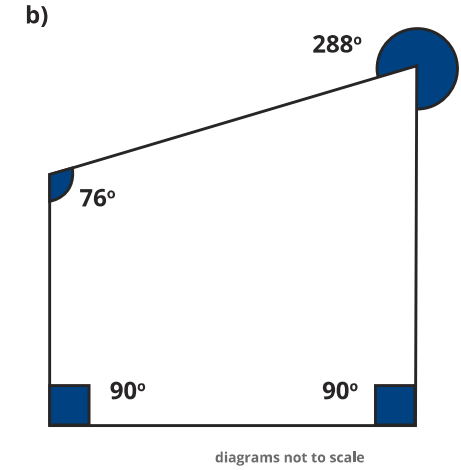
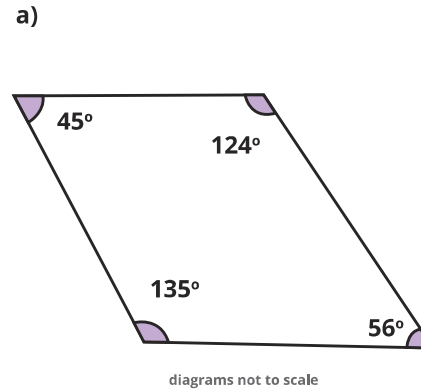
$$27 + 45 + 108 = 180^\circ$$

Angle Rules

2. Angles on a straight line always add up to  $180^\circ$ .

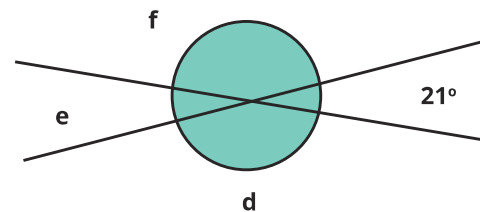
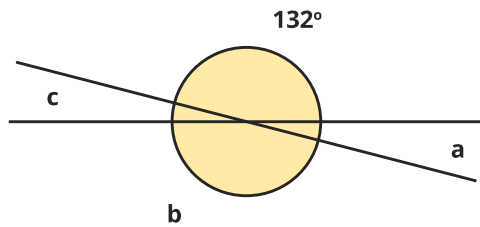
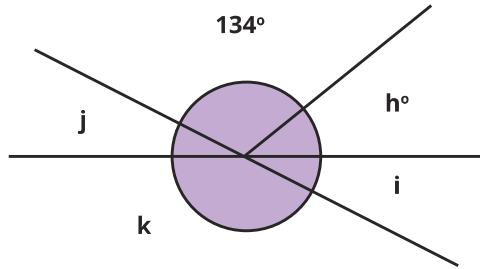


3. Angles in a quadrilateral always add up to  $360^\circ$ .



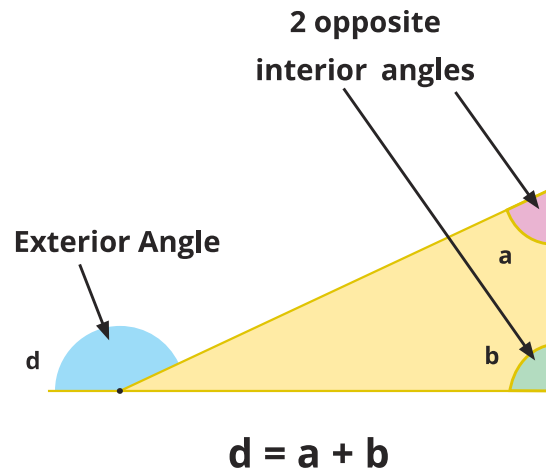
Angle Rules

4. Angles around a point always add up to  $360^\circ$ .



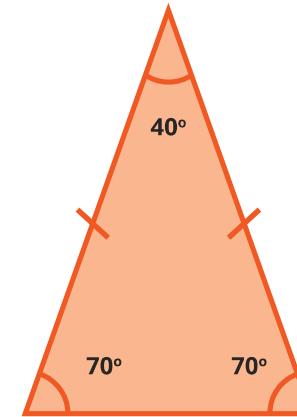
diagrams not to scale

5. Exterior angle of a triangle = sum of opposite interior angles.

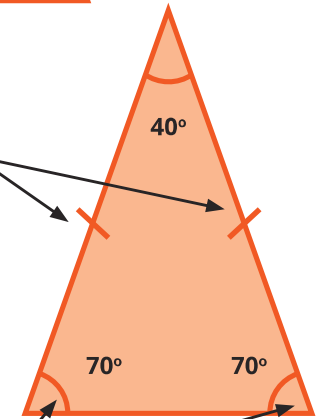


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6. Isosceles triangles have 2 sides the same and 2 angles the same.



The marked sides are of the same length



These angles are the same size



diagrams not to scale