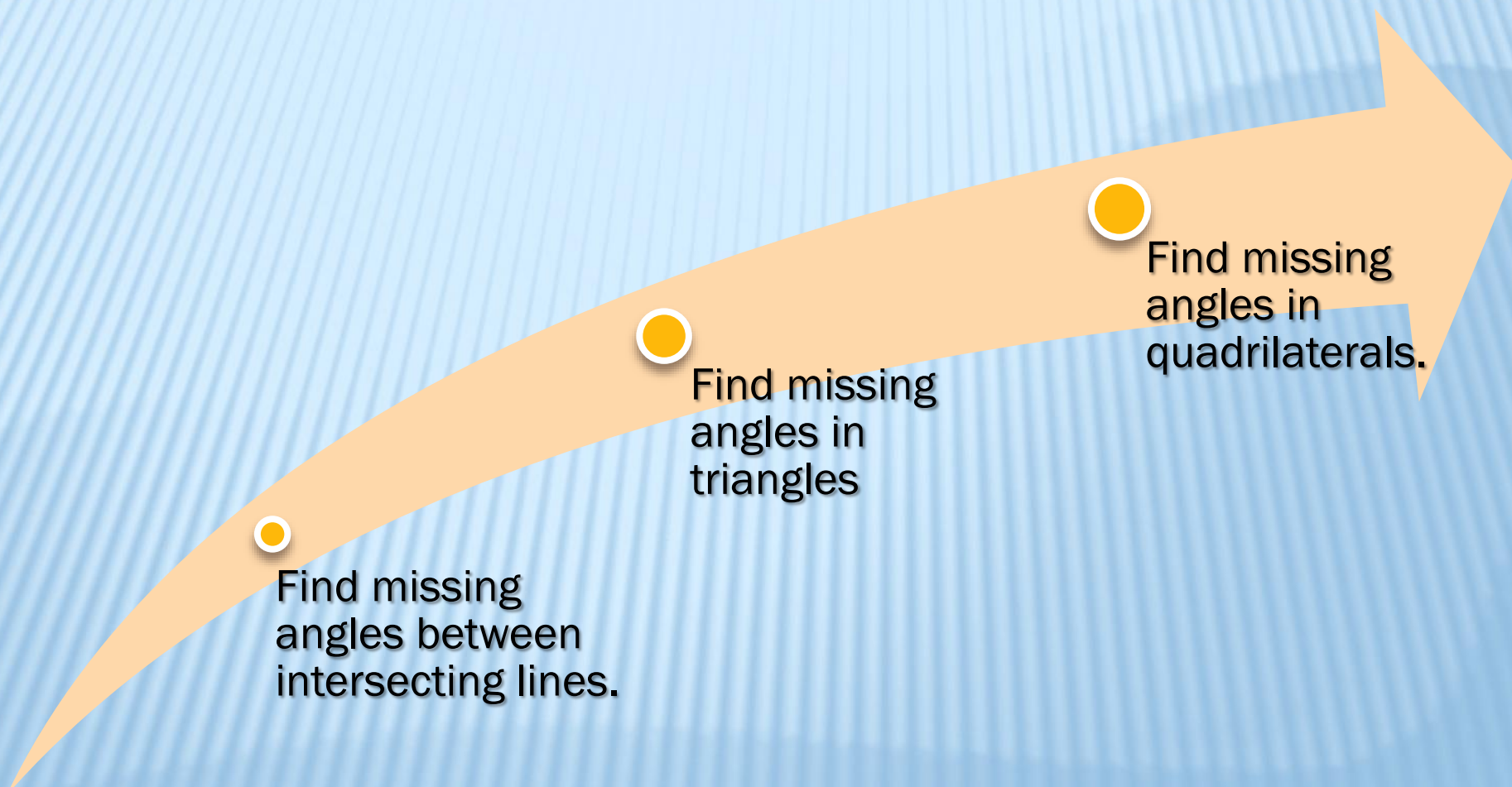


CALCULATING ANGLES

TODAY WE WILL:



Find missing angles between intersecting lines.

Find missing angles in triangles

Find missing angles in quadrilaterals.

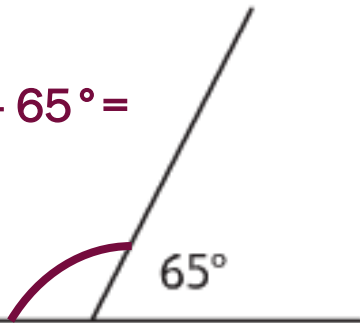
MISSING ANGLES ON A STRAIGHT LINE

✖ Remember:

- + Angles on a straight line add up to 180°
- + To calculate a missing angle on a straight line, take away the known angle from 180°
- + Eg:

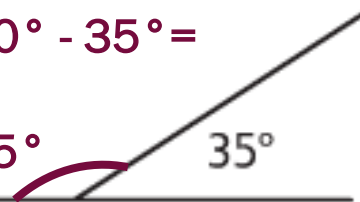
$$180^\circ - 65^\circ =$$

$$115^\circ$$



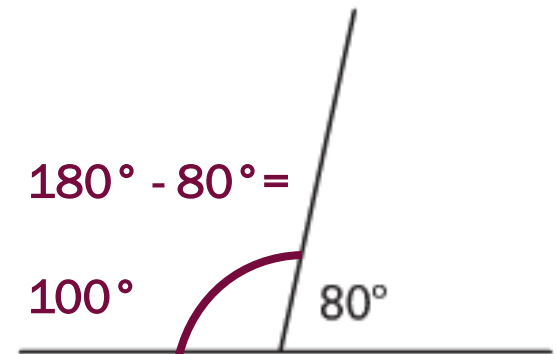
$$180^\circ - 35^\circ =$$

$$145^\circ$$



$$180^\circ - 80^\circ =$$

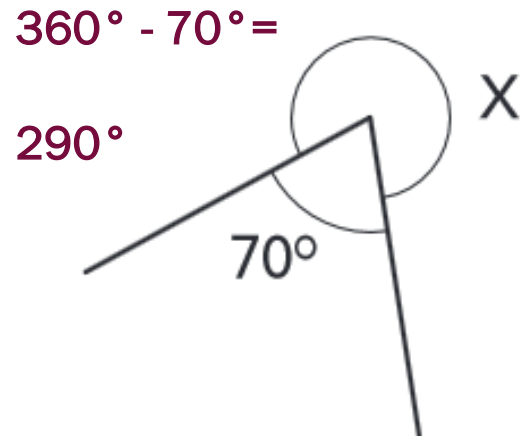
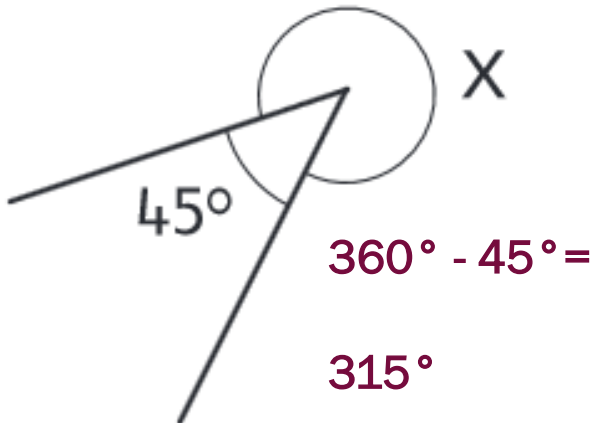
$$100^\circ$$



MISSING ANGLES IN A FULL TURN

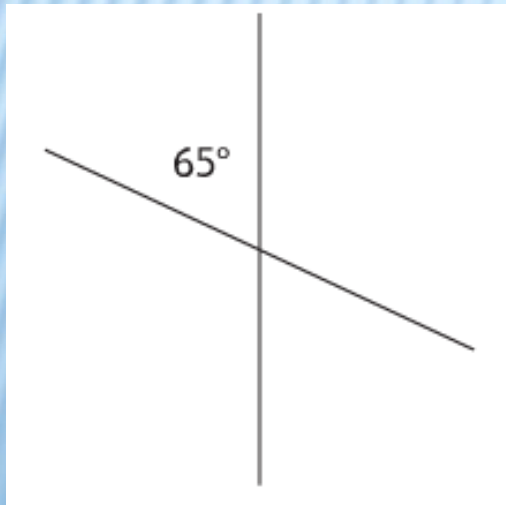
✖ Remember:

- + Angles in a full turn add up to 360°
- + To calculate a missing angle in a full turn, take away the known angle from 360°
- + Eg:



MISSING ANGLES ON INTERSECTING LINES

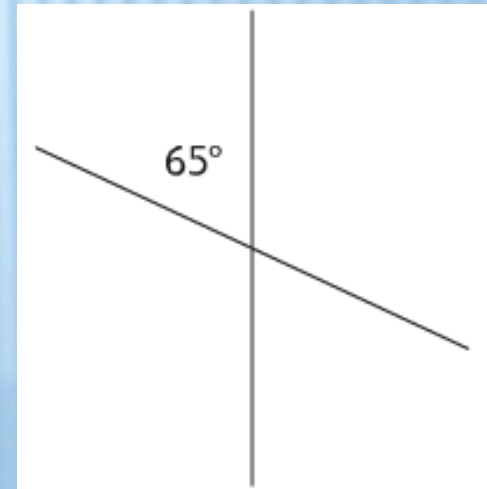
- ✖ Remember:
- ✖ All 4 angles will add up to 360°
- ✖ Opposite angles on a cross are equal
- ✖ Eg:



Step 1: Opposite angle is equal

Step 2: $65^\circ + 65^\circ = 130^\circ$
 $360^\circ - 130^\circ = 230^\circ$

Step 3: $230^\circ \div 2 = 115^\circ$



MISSING ANGLES WITHIN TURNS

Straight lines

- 180° - known angles

Full turns

- 360° - known angles

Intersecting lines

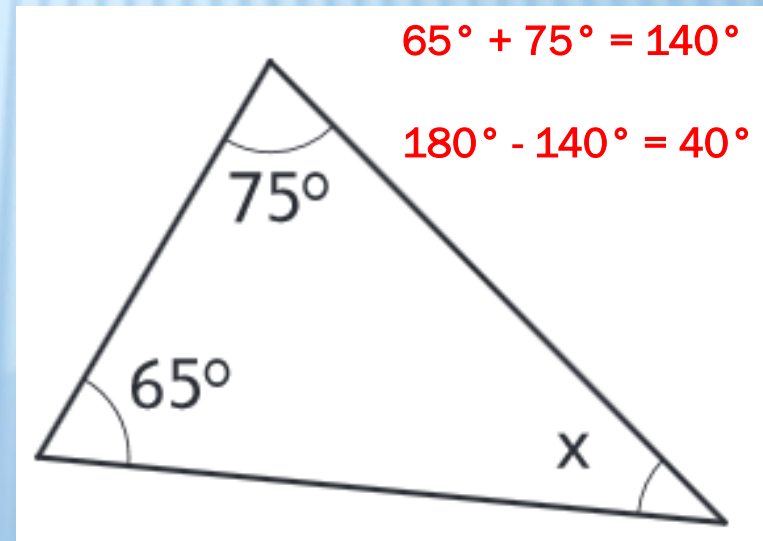
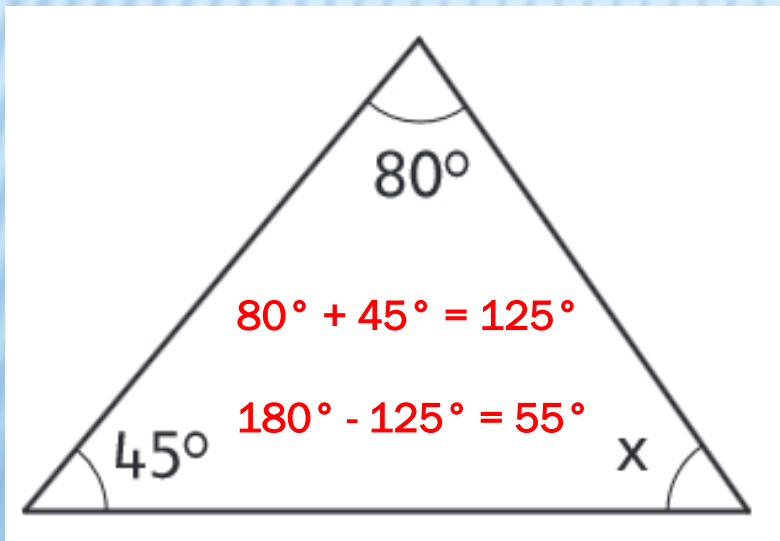
- Opposite angles are equal

You should now be able to complete questions 1-6 without a protractor.

MISSING ANGLES IN TRIANGLES

✖ Remember

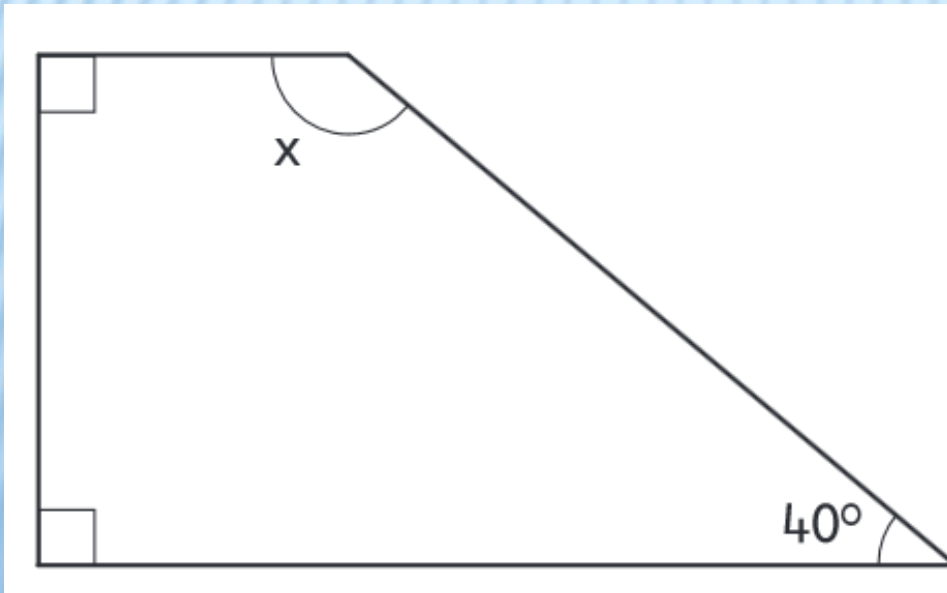
- + All angles in a triangle add up to 180°
- + To find the missing angle, add the known angles and subtract from 180°



MISSING ANGLES IN QUADRILATERALS

✖ Remember

- + A quadrilateral is any shape with 4 straight sides
 - ✖ E.g. square, rhombus, rectangle, trapezium, parallelogram
- + The angles in a quadrilateral add up to 360°



$$90^\circ + 90^\circ + 40^\circ = 220^\circ$$

$$360^\circ - 220^\circ = 140^\circ$$

CALCULATING MISSING ANGLES

180°

Angles on a straight line add up to 180°

Angles in a triangle add up to 180°

360°

Angles in a full turn add up to 360°

Angles in a quadrilateral add up to 360°

Intersecting Lines

Opposite angles are equal

The angles add up to 360°

You should now be able to complete all questions.