Angles topic test

12 questions | 22 marks | 30 minutes

Missing-angle problems with clear diagrams and reasons.

Equivalent correct methods earn the corresponding marks.

1. How many degrees are in a straight angle? [1 mark]

A straight angle is a half-turn.

Answer: 180°

2. How many degrees are in a full turn around a point? [1 mark]

A full turn returns to the starting direction.

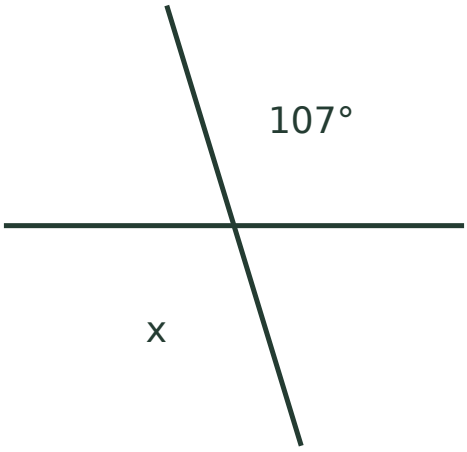
Answer: 360°

3. Two adjacent angles form a straight line. One is 118°. Find the other. [1 mark]

$180^\circ - 118^\circ = 62^\circ$.

Answer: 62°

4. Two lines cross. One angle is 107°. Find its vertically opposite angle. [1 mark]

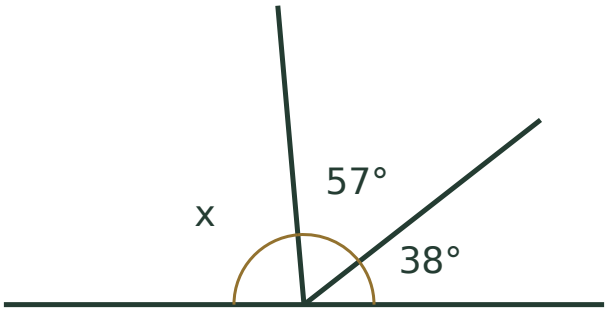


Two intersecting straight lines

Vertically opposite angles are equal.

Answer: 107°

5. A straight angle has parts 38°, 57° and x. Find x. [2 marks]



Adjacent angles on a straight line

$38 + 57 = 95.$

$180 - 95 = 85.$

Answer: 85°

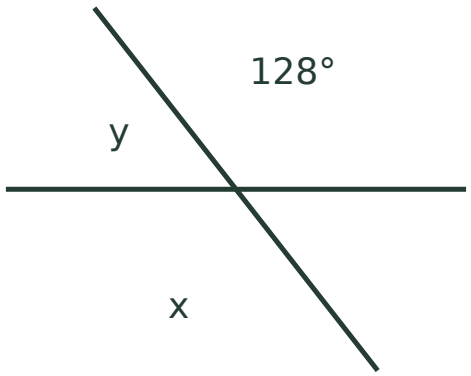
6. Angles around a point are 110°, 95° and x. Find x. [2 marks]

$110 + 95 = 205.$

$360 - 205 = 155.$

Answer: 155°

7. Two straight lines cross. One angle is 128°. Find its opposite angle and one adjacent angle. Give a reason for each. [3 marks]



Two intersecting straight lines

Opposite angles are equal.

Adjacent angles form 180°, so $180 - 128 = 52$.

Answer: Opposite 128°; adjacent 52°.

8. A right angle is split into 34° and x. Find x. [1 mark]

$90^\circ - 34^\circ = 56^\circ$.

Answer: 56°

9. A full turn is split into one 96° angle and two equal angles. Find each equal angle. [2 marks]

$360 - 96 = 264$.

$264 \div 2 = 132$.

Answer: 132°

10. Four angles around a point are 64°, 88°, 103° and x. Find x and check. [3 marks]

$64 + 88 + 103 = 255.$

$360 - 255 = 105.$

$64 + 88 + 103 + 105 = 360.$

Answer: 105°

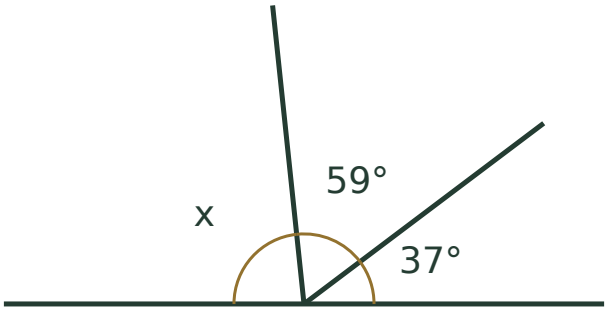
11. Ella says that a 109° angle has an 81° neighbour on a straight line. Explain the error and find the correct neighbour. [2 marks]

Straight-line parts must total 180°.

$180^\circ - 109^\circ = 71^\circ.$

Answer: $109 + 81 = 190$, so the angle labels cannot be right. The neighbour is 71°.

12. The diagram shows three parts of a straight angle: 37°, 59° and x. Find x. Write a reason and a check. [3 marks]



Adjacent angles on a straight line

$37^\circ + 59^\circ = 96^\circ.$

$x = 180^\circ - 96^\circ = 84^\circ$ because the parts form a straight angle.

$37^\circ + 59^\circ + 84^\circ = 180^\circ.$

Answer: $x = 84^\circ$