Year 6 maths: Angles on a line and at a point (Medium)

Maths · Shapes and space
Level: Medium

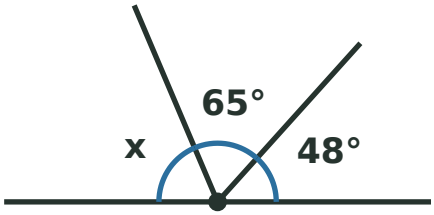
Student: _____ Date: _____

Instructions
- There are 10 questions. Read each one carefully.
- Write your answers on this paper. Use the space under a question to work it out.
- A grown-up can read a question aloud — that's fine.
- The answers are at the end. Check them together when you have finished.

Questions

1. Three angles share a straight line. Find x.

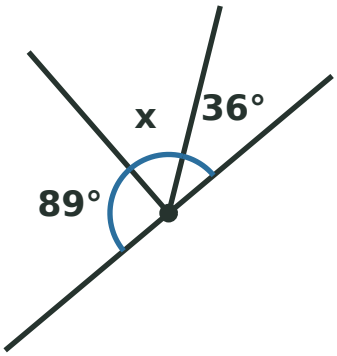
Answer: ____ °



Working:

2. The three angles on this line add up to 180°. What is x?

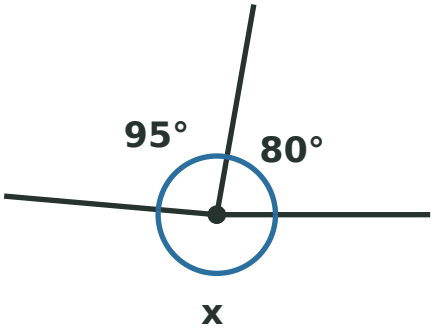
Answer: ____ °



Working:

3. Three angles meet at a point. Find x.

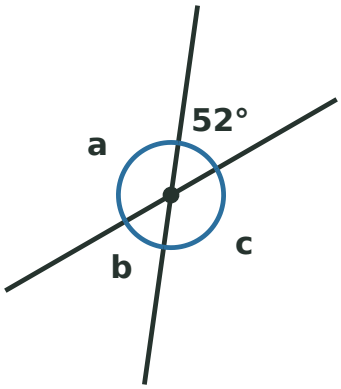
Answer: ____ °



Working:

4. Which angle is vertically opposite the 52° angle?

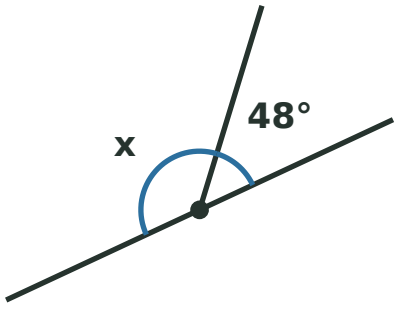
Circle one answer.



○ **A** ○ **B** c ○ **C** b

5. x is 132°. Which fact explains why?

Circle one answer.



○ **A** Vertically opposite angles are equal, so x = 48°

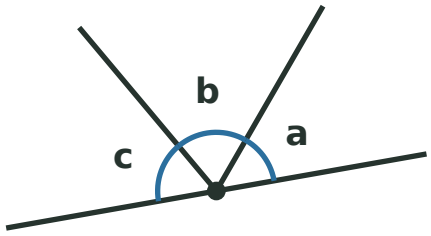
○ **B** Angles in a triangle add to 180°, so x = 180 − 48

○ **C** Angles at a point add to 360°, and 360 − 48 = 312

○ **D** Angles on a straight line add to 180°, and 180 − 48 = 132

6. Which pair of angles is NOT adjacent (they do not share an arm)?

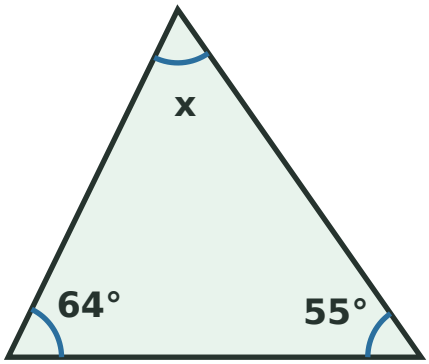
Circle one answer.



○ **A** a and b ○ **B** a and c ○ **C** b and c

7. Two angles of a triangle are marked. Find x.

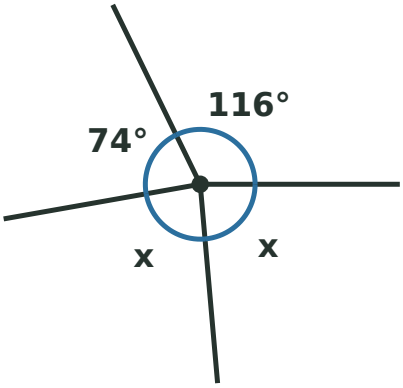
Answer: ____ °



Working:

8. Round a point the angles are 116°, 74° and two equal angles x. Find x.

Answer: ____ °



Working:

9. An isosceles triangle has a 40° angle between its two equal sides. What is each of the other two angles?

Circle one answer.

○ **A** 40° ○ **B** 160° ○ **C** 70°

10. Which set of three angles can be the angles of one triangle?

Circle one answer.

○ **A** 150°, 120° and 90° ○ **B** 92°, 48° and 40°

○ **C** 90°, 90° and 90°

Answer key

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1. 67°

48 + 65 = 113. Angles on a straight line add to 180°. 180 − 113 = 67°.

2. 55°

36 + 89 = 125. Angles on a straight line add to 180°. 180 − 125 = 55°.

3. 185°

80 + 95 = 175. Angles round a point add to 360°. 360 − 175 = 185°.

4. C — b

Vertically opposite angles face each other across the crossing. Angle b is opposite the 52° angle.

5. D — Angles on a straight line add to 180°, and 180 − 48 = 132

The two angles lie on a straight line, so they add to 180°.

6. B — a and c

a and b share an arm, and so do b and c. a and c have b between them.

7. 61°

Angles in a triangle add to 180°. 64 + 55 = 119, and 180 − 119 = 61°.

8. 85°

116 + 74 = 190. 360 − 190 = 170. The two equal angles share 170°: 170 ÷ 2 = 85°.

9. C — 70°

180 − 40 = 140. The two other angles are equal: 140 ÷ 2 = 70°.

10. B — 92°, 48° and 40°

92 + 48 + 40 = 180, so these fit a triangle. The others add to 360° and 270°.