

GCSE Maths: The angle in a semicircle (Higher): worksheet

GCSE Maths - Circle Theorems - Higher - Lesson 26.2

Name: _____

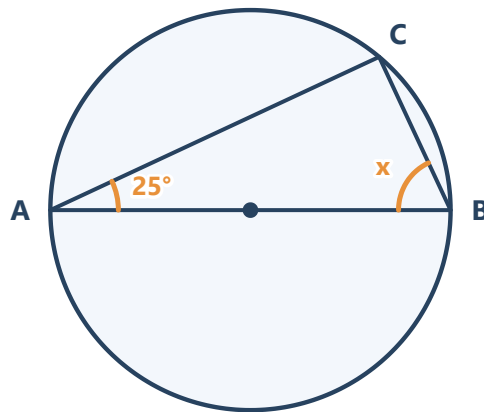
Date: _____

Score: _____

19 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch26-circle-theorems/higher/the-angle-in-a-semicircle/

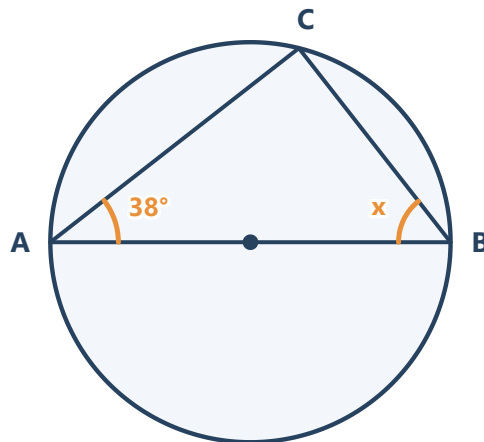
Exercise 26B The angle in a semicircle Non-calculator

- 1 AB is a diameter of the circle. C is a point on the circle. Angle $CAB = 25^\circ$. Work out the size of angle ABC . Give a reason for each step.



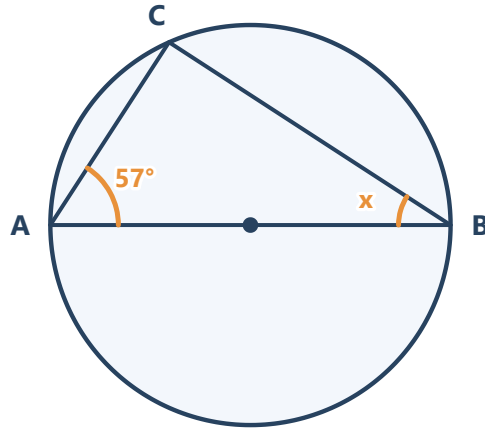
Answer:

- 2 AB is a diameter of the circle. C is a point on the circle. Angle $CAB = 38^\circ$. Work out the size of angle ABC . Give a reason for each step.



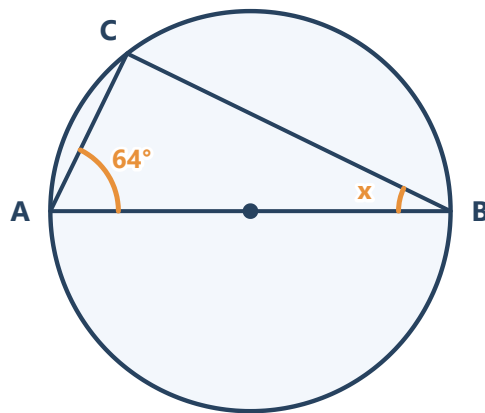
Answer:

- 3 AB is a diameter of the circle. C is a point on the circle. Angle $CAB = 57^\circ$. Work out the size of angle ABC . Give a reason for each step.



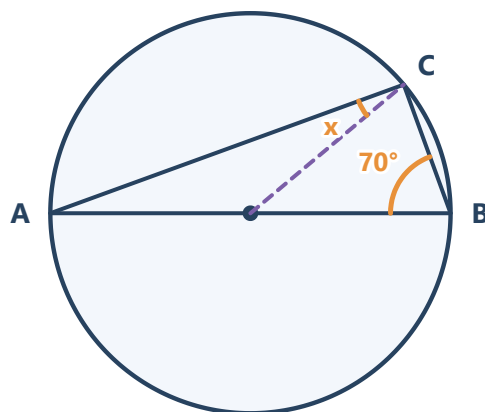
Answer:

- 4** AB is a diameter of the circle. C is a point on the circle. Angle $CAB = 64^\circ$. Work out the size of angle ABC . Give a reason for each step.



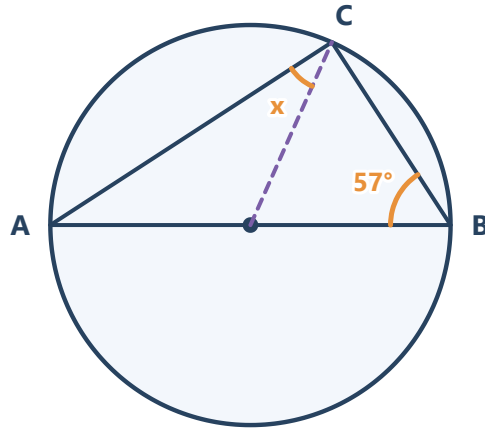
Answer:

- 5** AB is a diameter of the circle with centre O . C is a point on the circle. Angle $ABC = 70^\circ$. Work out the size of angle ACO . Give a reason for each step.



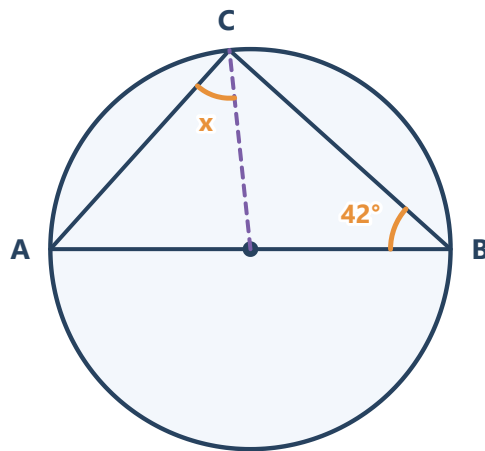
Answer:

- 6** AB is a diameter of the circle with centre O . C is a point on the circle. Angle $ABC = 57^\circ$. Work out the size of angle ACO . Give a reason for each step.



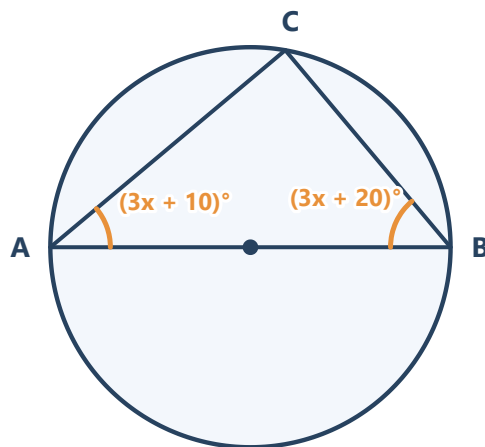
Answer:

- 7** AB is a diameter of the circle with centre O . C is a point on the circle. Angle $ABC = 42^\circ$. Work out the size of angle ACO . Give a reason for each step.



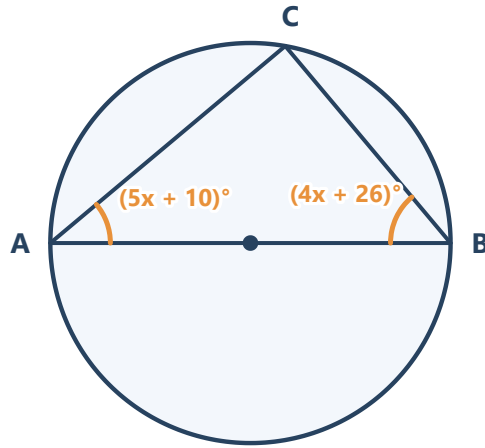
Answer:

- 8** AB is a diameter of the circle. Angle $CAB = (3x + 10)^\circ$ and angle $ABC = (3x + 20)^\circ$. Work out the value of x .



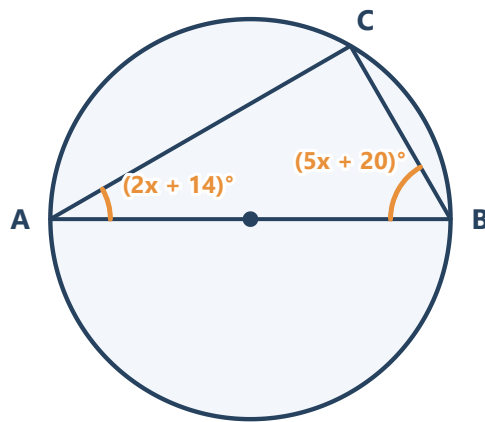
Answer:

- 9** AB is a diameter of the circle. Angle $CAB = (5x + 10)^\circ$ and angle $ABC = (4x + 26)^\circ$. Work out the value of x .



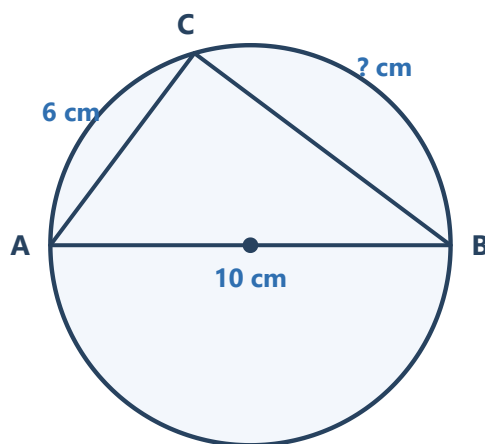
Answer:

- 10** AB is a diameter of the circle. Angle $CAB = (2x + 14)^\circ$ and angle $ABC = (5x + 20)^\circ$. Work out the value of x .



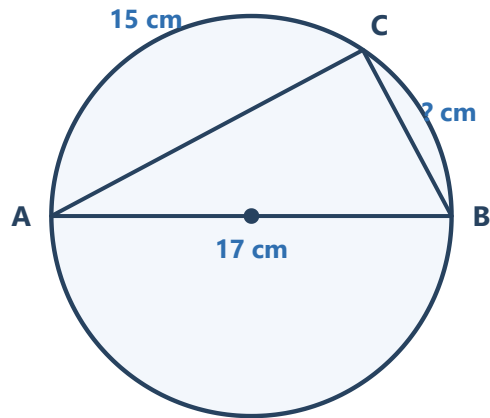
Answer:

- 11** AB is a diameter of the circle. $AB = 10$ cm and $AC = 6$ cm. Work out the length of BC .



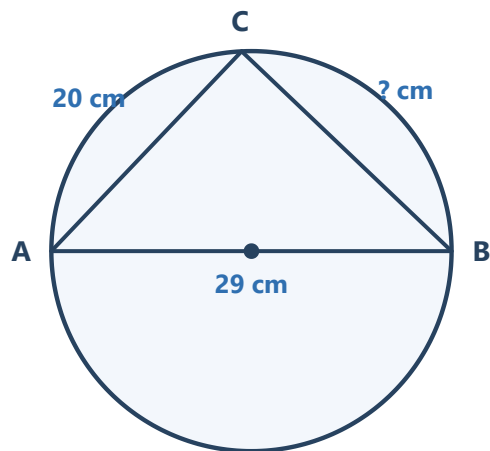
Answer:

- 12** AB is a diameter of the circle. $AB = 17$ cm and $AC = 15$ cm. Work out the length of BC .



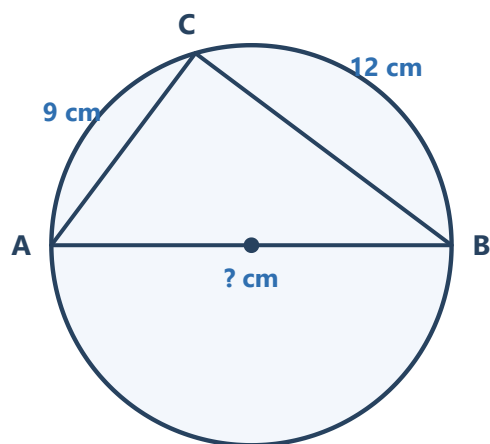
Answer:

- 13** AB is a diameter of the circle. $AB = 29$ cm and $AC = 20$ cm. Work out the length of BC .



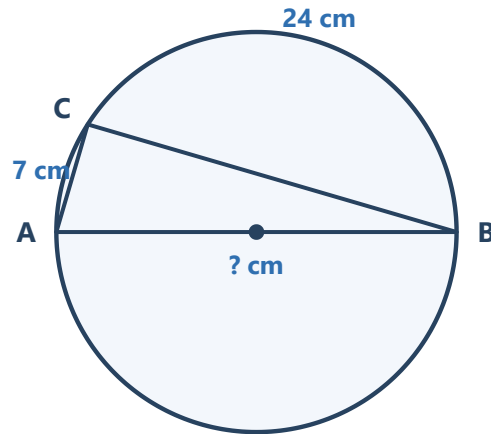
Answer:

- 14** AB is a diameter of the circle. $AC = 9$ cm and $BC = 12$ cm. Work out the radius of the circle.



Answer:

- 15** AB is a diameter of the circle. $AC = 7$ cm and $BC = 24$ cm. Work out the radius of the circle.



Answer:

- 16** Mia says: "Angle ACB must be 90° , because C is on the circle." What important information is missing from her reason?

Answer:

- 17** A right-angled triangle has sides of 9 cm, 12 cm and 15 cm. A circle is drawn through all three corners of the triangle. Work out the radius of the circle.

Answer:

- 18** A , B and C are on a circle and angle $ACB = 90^\circ$. Explain why AB must be a diameter.

Answer:

- 19** Complete this proof that the angle in a semicircle is 90° . AB is a diameter of a circle with centre O , and C is on the circle. Join OC . Triangle OAC is isosceles with base angles a . Triangle OBC is isosceles with base angles b . Write down the three angles of triangle ABC and finish the proof.

Answer:
