

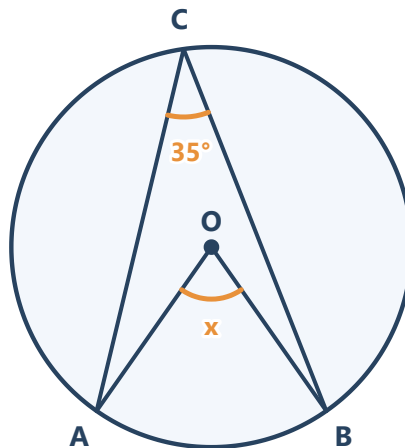
GCSE Maths: The angle at the centre (Higher): answers

GCSE Maths - Circle Theorems - Higher - Lesson 26.3

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch26-circle-theorems/higher/the-angle-at-the-centre/

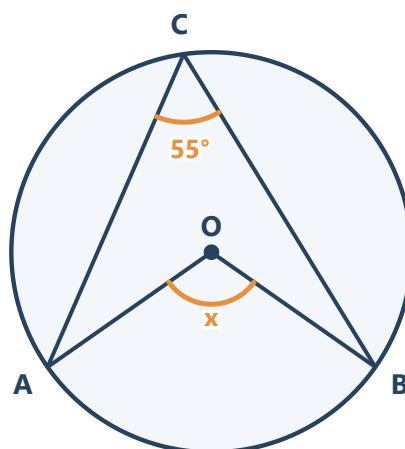
Exercise 26C The angle at the centre Non-calculator

- 1 A , B and C are points on a circle with centre O . Angle $ACB = 35^\circ$. Work out the size of angle AOB . Give a reason for your answer.



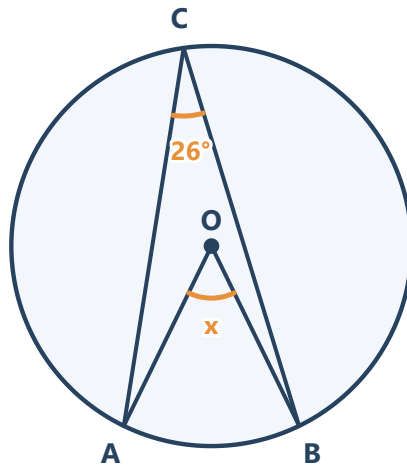
Answer: 70° (the angle at the centre is twice the angle at the circumference)

- 2 A , B and C are points on a circle with centre O . Angle $ACB = 55^\circ$. Work out the size of angle AOB . Give a reason for your answer.



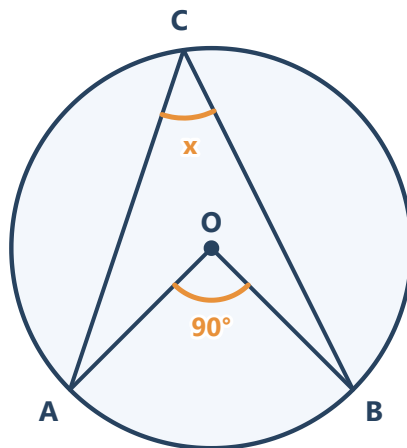
Answer: 110° (the angle at the centre is twice the angle at the circumference)

- 3 A , B and C are points on a circle with centre O . Angle $ACB = 26^\circ$. Work out the size of angle AOB . Give a reason for your answer.



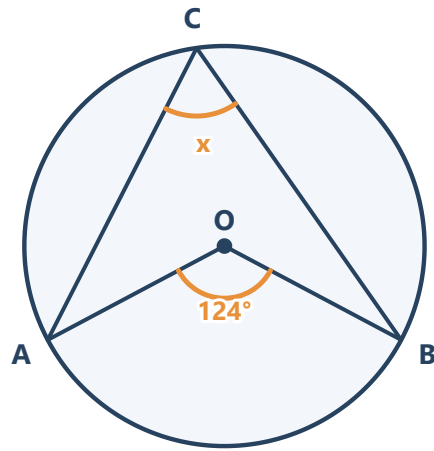
Answer: 52° (the angle at the centre is twice the angle at the circumference)

- 4 A , B and C are points on a circle with centre O . Angle $AOB = 90^\circ$. Work out the size of angle ACB . Give a reason for your answer.



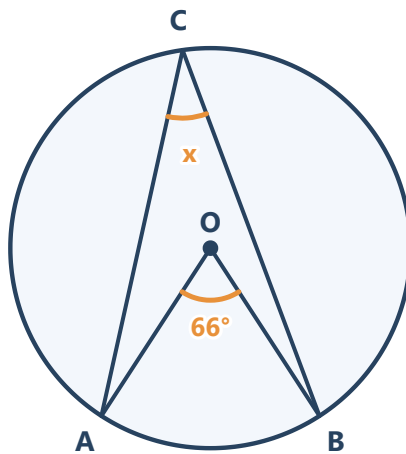
Answer: 45° (the angle at the centre is twice the angle at the circumference)

- 5 A , B and C are points on a circle with centre O . Angle $AOB = 124^\circ$. Work out the size of angle ACB . Give a reason for your answer.



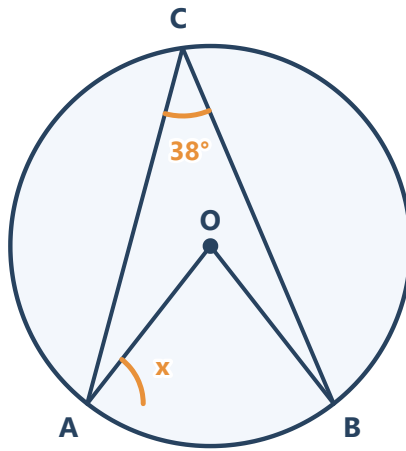
Answer: 62° (the angle at the centre is twice the angle at the circumference)

- 6 A , B and C are points on a circle with centre O . Angle $AOB = 66^\circ$. Work out the size of angle ACB . Give a reason for your answer.



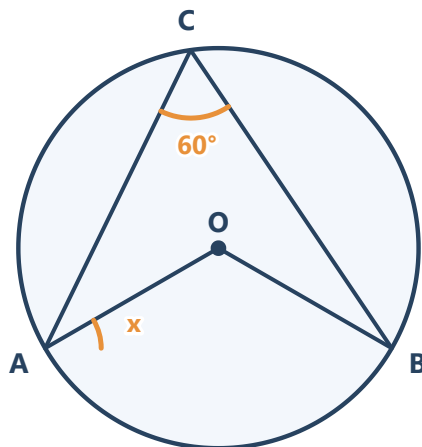
Answer: 33° (the angle at the centre is twice the angle at the circumference)

- 7 A , B and C are points on a circle with centre O . Angle $ACB = 38^\circ$. Work out the size of angle OAB . Give a reason for each step.



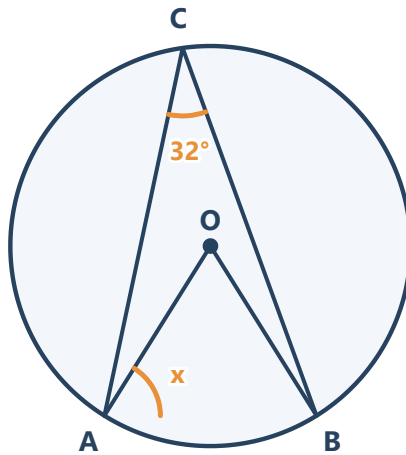
Answer: 52° (the angle at the centre is twice the angle at the circumference; the base angles of an isosceles triangle are equal)

- 8 A , B and C are points on a circle with centre O . Angle $ACB = 60^\circ$. Work out the size of angle OAB . Give a reason for each step.



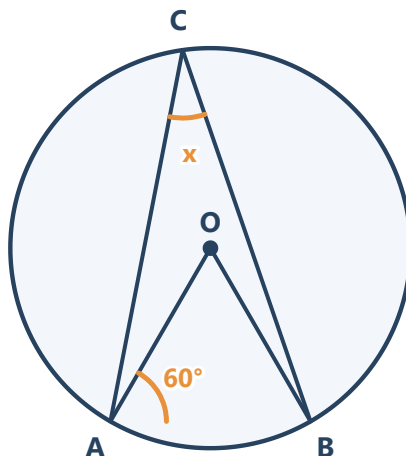
Answer: 30° (the angle at the centre is twice the angle at the circumference; the base angles of an isosceles triangle are equal)

- 9 A , B and C are points on a circle with centre O . Angle $ACB = 32^\circ$. Work out the size of angle OAB . Give a reason for each step.



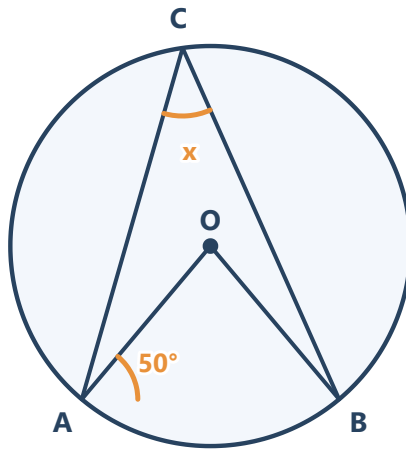
Answer: 58° (the angle at the centre is twice the angle at the circumference; the base angles of an isosceles triangle are equal)

- 10** A , B and C are points on a circle with centre O . Angle $OAB = 60^\circ$. Work out the size of angle ACB . Give a reason for each step.



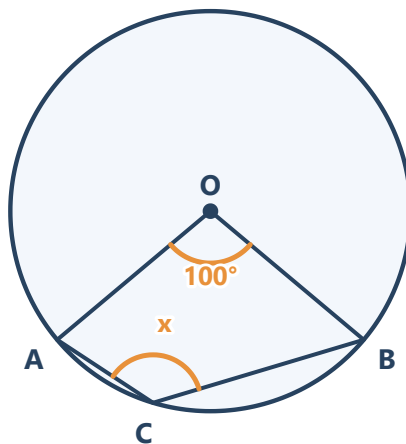
Answer: 30° (the base angles of an isosceles triangle are equal; the angle at the centre is twice the angle at the circumference)

- 11** A , B and C are points on a circle with centre O . Angle $OAB = 50^\circ$. Work out the size of angle ACB . Give a reason for each step.



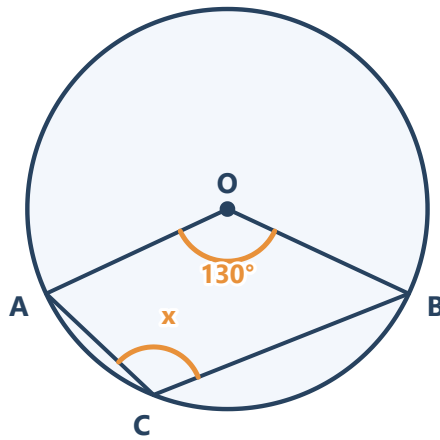
Answer: 40° (the base angles of an isosceles triangle are equal; the angle at the centre is twice the angle at the circumference)

- 12** A , B and C are points on a circle with centre O . C lies on the **minor** arc AB . Angle $AOB = 100^\circ$. Work out the size of angle ACB . Give a reason for each step.



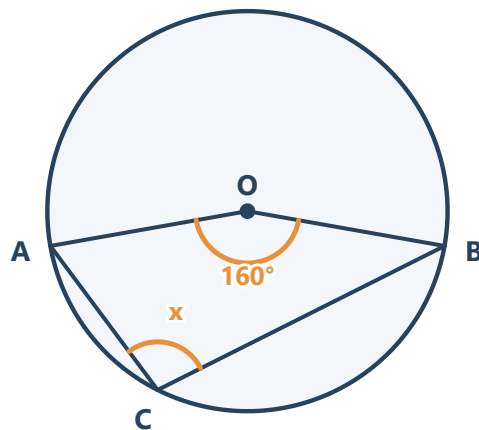
Answer: 130° (angles around a point add up to 360° ; the angle at the centre is twice the angle at the circumference)

- 13** A , B and C are points on a circle with centre O . C lies on the **minor** arc AB . Angle $AOB = 130^\circ$. Work out the size of angle ACB . Give a reason for each step.



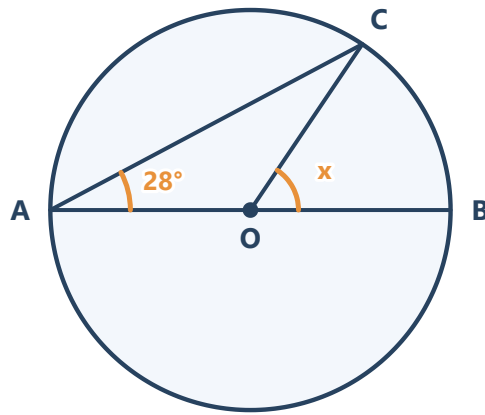
Answer: 115° (angles around a point add up to 360° ; the angle at the centre is twice the angle at the circumference)

- 14** A , B and C are points on a circle with centre O . C lies on the **minor** arc AB . Angle $AOB = 160^\circ$. Work out the size of angle ACB . Give a reason for each step.



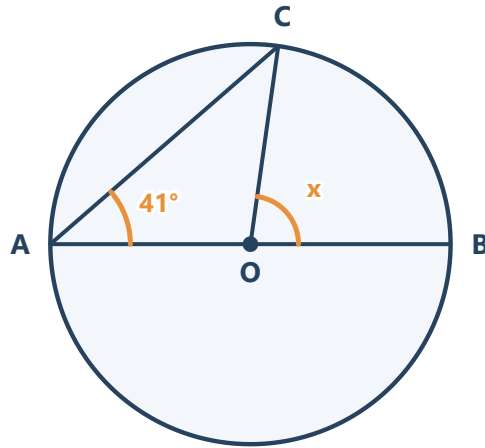
Answer: 100° (angles around a point add up to 360° ; the angle at the centre is twice the angle at the circumference)

- 15** AB is a diameter of a circle with centre O . C is a point on the circle. Angle $CAB = 28^\circ$. Work out the size of angle COB .



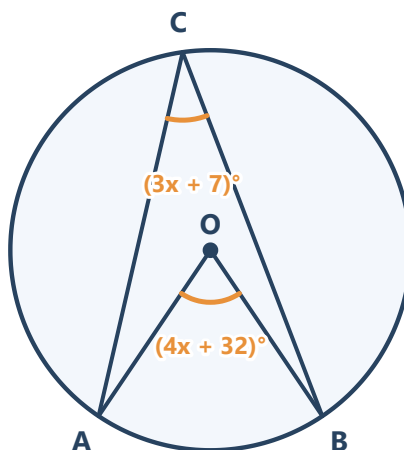
Answer: 56° (the angle at the centre is twice the angle at the circumference)

- 16** AB is a diameter of a circle with centre O . C is a point on the circle. Angle $CAB = 41^\circ$. Work out the size of angle COB .



Answer: 82° (the angle at the centre is twice the angle at the circumference)

- 17** A , B and C are points on a circle with centre O . Angle $AOB = (4x + 32)^\circ$ and angle $ACB = (3x + 7)^\circ$.



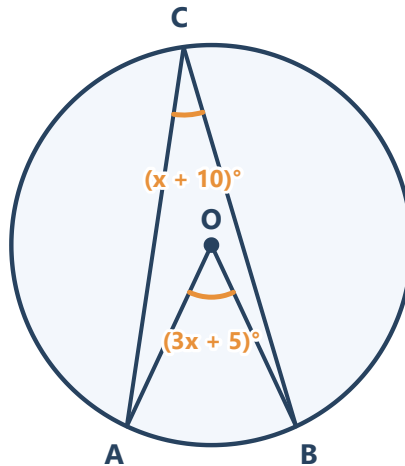
- (a) Work out the value of x .

Answer: $x = 9$

- (b) Work out the size of angle ACB .

Answer: 34°

- 18** A , B and C are points on a circle with centre O . Angle $AOB = (3x + 5)^\circ$ and angle $ACB = (x + 10)^\circ$.



- (a) Work out the value of x .

Answer: $x = 15$

- (b) Work out the size of angle ACB .

Answer: 25°

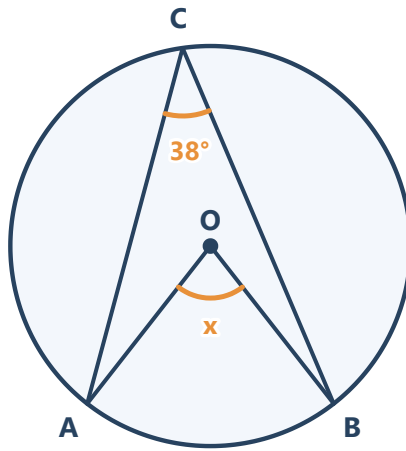
- 19** The 12 and the 4 on a circular clock face are joined to the centre O . Each hour mark is 30° round the centre. A is the 12, B is the 4 and C is the 9, all on the edge of the clock. Work out angle ACB . Give a reason.

Answer: 60° (the angle at the centre is twice the angle at the circumference)

- 20** Ben says: "The angle at the centre is 50° , so the angle at the circumference is 100° ." Explain his mistake and give the correct answer.

Answer: He doubled instead of halving. Correct answer: 25° .

- 21** A , B and C are on a circle with centre O . Angle $ACB = x$. Show that angle $OAB = 90^\circ - x$.



Answer: angle $OAB = 90^\circ - x$

- 22** A and B are the ends of a diameter of a circle with centre O . Use the angle at the centre theorem to show that the angle in a semicircle is 90° .

Answer: The angle at the centre on the diameter is 180° , so the angle at the circumference is $180^\circ \div 2 = 90^\circ$.