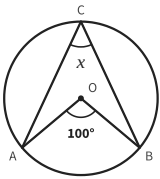


Circle Theorems: Angle at the Centre

ANSWERS

1 centre = $2 \times$ circumference

Find x .



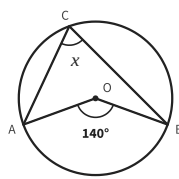
$$\boxed{100} = 2 \times \boxed{50}$$

angle at centre angle at circumference

$$x = 50^\circ$$

2

Find x .



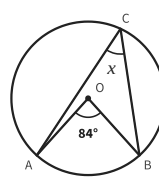
$$\boxed{140} = 2 \times \boxed{70}$$

angle at centre angle at circumference

$$x = 70^\circ$$

3

Find x .



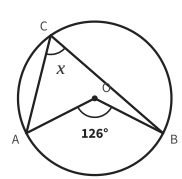
$$\boxed{84} = 2 \times \boxed{42}$$

angle at centre angle at circumference

$$x = 42^\circ$$

4

Find x .



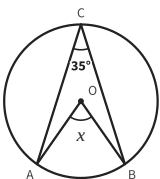
$$\boxed{126} = 2 \times \boxed{63}$$

angle at centre angle at circumference

$$x = 63^\circ$$

5 Notice the change!

Find x .



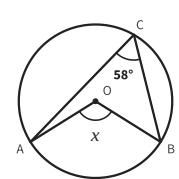
$$\boxed{70} = 2 \times \boxed{35}$$

angle at centre angle at circumference

$$x = 35^\circ$$

6

Find x .



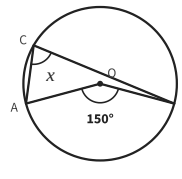
$$\boxed{116} = 2 \times \boxed{58}$$

angle at centre angle at circumference

$$x = 58^\circ$$

7

Find x .

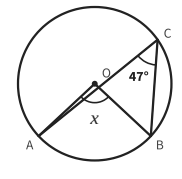


The angle at the centre is twice the angle at the circumference.

$$x = 75^\circ$$

8

Find x .



The angle at the centre is twice the angle at the circumference.

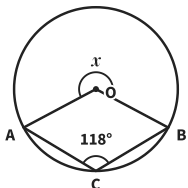
$$x = 47^\circ$$

Circle Theorems: Angle at the Centre further practice

ANSWERS

9

O is the centre of the circle.
Find the reflex angle AOB, marked x .



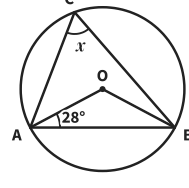
the angle at the centre is twice the angle at C

$$x = 2 \times 118$$

$$\text{Answer } x = 236^\circ$$

10

O is the centre of the circle.
Find angle ACB, marked x .



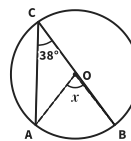
OA = OB, so angle AOB = $180 - 2 \times 28 = 124^\circ$

$$x = 124 \div 2$$

$$\text{Answer } x = 62^\circ$$

11

A camera at C on the edge of a round courtyard just sees two doors, A and B, also on the edge: its view is 38° wide. A camera at the centre O must also just see both doors. How wide must its view be?

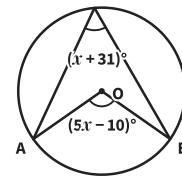


angle AOB = $2 \times$ angle ACB

$$\text{Answer } 76^\circ$$

12

O is the centre of the circle.
Find the value of x .



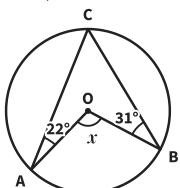
$$5x - 10 = 2(x + 31)$$

$$5x - 10 = 2x + 62, \text{ so } 3x = 72$$

$$\text{Answer } x = 24$$

13

O is the centre of the circle.
Find angle AOB, marked x .



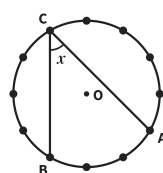
join OC: angle OCA = 22° and angle OCB = 31° (isosceles)

$$\text{angle ACB} = 53^\circ, \text{ so } x = 2 \times 53$$

$$\text{Answer } x = 106^\circ$$

14

A big wheel has 12 pods equally spaced round its rim. Pods A and B are 3 gaps apart. Find angle ACB.



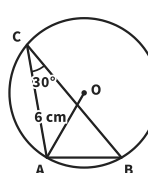
angle AOB = $3 \times 360 \div 12 = 90^\circ$

$$\text{angle ACB} = 90 \div 2$$

$$\text{Answer } 45^\circ$$

15

O is the centre and the radius is 6 cm. Angle ACB = 30° . Find the length of the chord AB. Explain your method.



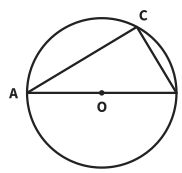
angle AOB = 60° , and OA = OB = 6 cm

so triangle OAB is equilateral

$$\text{Answer } AB = 6 \text{ cm}$$

16

AB is a diameter. Use the angle at the centre theorem to explain why angle ACB is always 90° .



AOB is a straight line, so angle AOB = 180°

the angle at C is half of that: $180 \div 2 = 90^\circ$

angle ACB = 90°

So