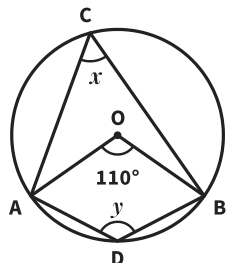


Circle Theorems: Angle at the Centre *stretch*

ANSWERS

1

O is the centre of the circle.
Find angles x and y .



Not drawn accurately

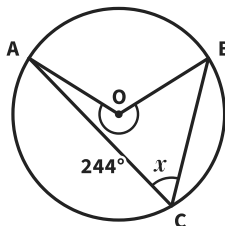
$$x = 110 \div 2 \text{ (angle at the centre)}$$

$$\text{reflex } AOB = 250^\circ, \text{ so } y = 250 \div 2$$

$$\text{Answer } x = 55^\circ, y = 125^\circ$$

2

O is the centre. The reflex angle AOB is 244° . Find angle ACB, marked x .



Not drawn accurately

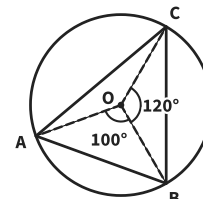
$$\text{angle } AOB = 360 - 244 = 116^\circ$$

$$x = 116 \div 2 \text{ (angle at the centre)}$$

$$\text{Answer } x = 58^\circ$$

3

Lamps A, B and C are on the edge of a round pond, centre O. Find the angles of triangle ABC.



Not drawn accurately

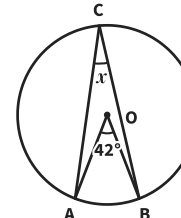
$$ACB = 100 \div 2 = 50^\circ, BAC = 120 \div 2 = 60^\circ \text{ (angle at the centre)}$$

$$ABC = 180 - 50 - 60 \text{ (check: } AOC = 140^\circ, 140 \div 2)$$

$$\text{Answer } A = 60^\circ, B = 70^\circ, C = 50^\circ$$

4

O is the centre.
Ruby says $x = 2 \times 42 = 84^\circ$.
Explain her mistake and find x .



Not drawn accurately

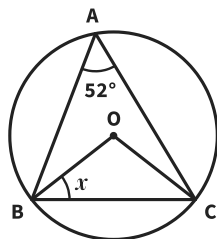
the angle at the centre is twice the angle at the edge, not half

$$x = 42 \div 2$$

$$\text{Answer } x = 21^\circ$$

5

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



Not drawn accurately

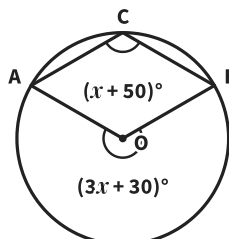
$$\text{angle } BOC = 2 \times 52 = 104^\circ \text{ (angle at the centre)}$$

$$OB = OC: x = (180 - 104) \div 2$$

$$\text{Answer } x = 38^\circ$$

6

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



Not drawn accurately

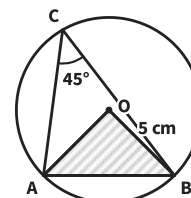
$$3x + 30 = 2(x + 50) \text{ (angle at the centre)}$$

$$3x + 30 = 2x + 100$$

$$\text{Answer } x = 70$$

7

O is the centre and the radius is 5 cm.
Find the area of the shaded triangle AOB.



Not drawn accurately

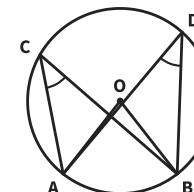
$$\text{angle } AOB = 2 \times 45 = 90^\circ \text{ (angle at the centre)}$$

$$\text{area} = \frac{1}{2} \times 5 \times 5$$

$$\text{Answer } 12.5 \text{ cm}^2$$

8

C and D are on the circle, on the same side of AB. Explain why angle ACB = angle ADB.



$$\text{angle } ACB = \frac{1}{2} \text{ angle } AOB \text{ (angle at the centre)}$$

$$\text{angle } ADB = \frac{1}{2} \text{ angle } AOB \text{ too}$$

$$\text{Reason both are half of angle } AOB$$