

Arcs and Sectors

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **27**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

- 1** A sector of a circle has an angle of 90°
What fraction of the whole circle is the sector?
Circle your answer.

[1 mark]

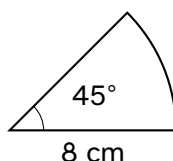
$\frac{1}{2}$

$\frac{1}{3}$

$\frac{1}{4}$

$\frac{1}{6}$

- 2** The diagram shows a sector of a circle with radius 8 cm and angle 45°



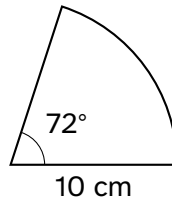
Not drawn accurately

Work out the area of the sector.
Give your answer to 1 decimal place.

[2 marks]

Answer _____ cm^2

- 3 A sector has radius 10 cm and angle 72°



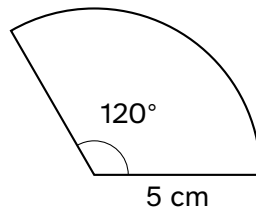
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Work out the arc length of the sector.
Give your answer to 1 decimal place.

[2 marks]

Answer _____ cm

- 4 A sector has radius 5 cm and angle 120°



Not drawn accurately

Work out the perimeter of the sector.
Give your answer to 1 decimal place.

[3 marks]

Answer _____ cm

- 5** A circular pizza has diameter 30 cm.
It is cut into 8 equal slices.

Work out the area of one slice.
Give your answer to 1 decimal place.

[3 marks]

Answer _____ cm^2

- 6** Work out the area of a sector with radius 6 cm and angle 60°
Give your answer in terms of π .

[2 marks]

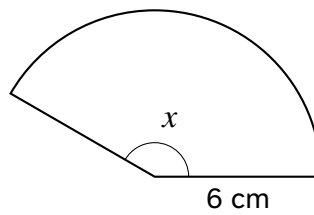
Answer _____ cm^2

- 7** The minute hand of a clock is 12 cm long.
How far does the tip of the minute hand travel in 20 minutes?
Give your answer to 1 decimal place.

[3 marks]

Answer _____ cm

- 8 Here is a sector of a circle with radius 6 cm.
The area of the sector is $15\pi \text{ cm}^2$



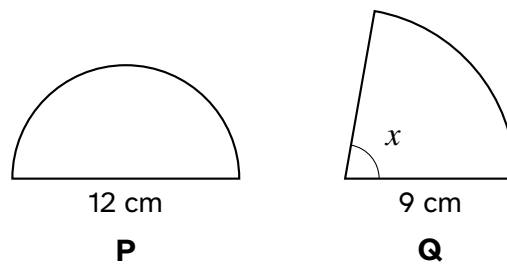
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Work out the size of angle x .

[3 marks]

Answer _____ degrees

- 9 Shape P is a semicircle with diameter 12 cm.
Shape Q is a sector of a circle with radius 9 cm and angle x .



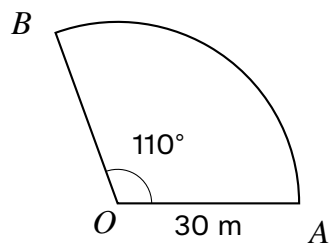
Not drawn accurately

Shape P and shape Q have the same area.
Work out the size of angle x .
You must show your working.

[4 marks]

Answer _____ degrees

- 10** A path in a park is in the shape of a sector of a circle, centre O .
The radius is 30 m and angle $AOB = 110^\circ$
The path goes from O to A , along the arc to B , then back to O .



Not drawn accurately

Esi walks once around the path at an average speed of 1.2 m/s.
How long does it take her?
Give your answer to the nearest second.

[4 marks]

Answer _____ seconds