

Arcs, Sectors and Segments

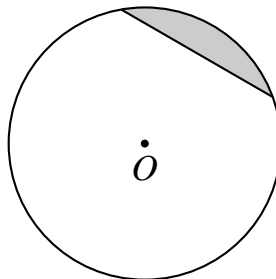
For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **26**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator. Diagrams are not drawn accurately.

- 1** The diagram shows a circle, centre O .



Not drawn accurately

Circle the name of the shaded region.

[1 mark]

arc

chord

sector

segment

- 2** A sector has radius 9 cm and angle 80°
Work out the length of the arc.
Give your answer in terms of π

[2 marks]

Answer _____ cm

- 3 A sector of a circle has radius 6 cm and angle 150°
Work out the area of the sector. Give your answer in terms of π .

[2 marks]

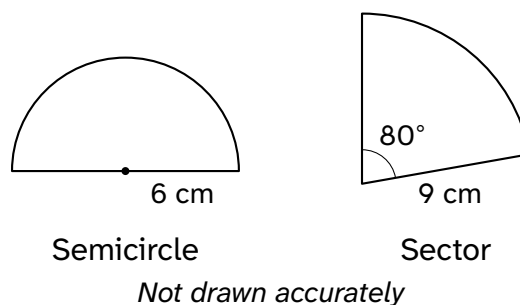
Answer _____ cm^2

- 4 A sector has radius 7 cm and arc length 11 cm.
Work out the angle of the sector.
Give your answer to the nearest degree.

[2 marks]

Answer _____ degrees

- 5 The diagram shows a semicircle and a sector of a different circle.
The semicircle has radius 6 cm.



Tomasz says,

“The semicircle and the sector have the same area.”

Is Tomasz correct?

Tick a box.

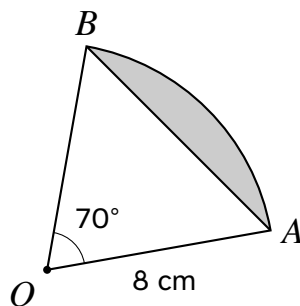
Show working to support your answer.

[2 marks]

☐ Yes

☐ No

- 6 OAB is a sector of a circle, centre O , radius 8 cm.



- (a) Work out the length of the arc AB .

[2 marks]

Answer _____ cm

- (b) Work out the area of the shaded segment.

[4 marks]

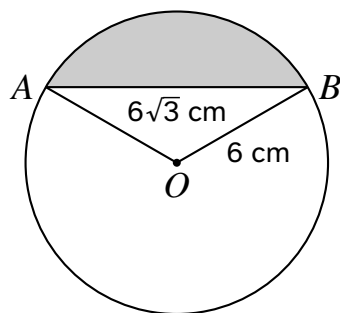
Answer _____ cm^2

- 7 The area of a sector is $12\pi \text{ cm}^2$. The radius is 6 cm.
Work out the perimeter of the sector.
Give your answer in the form $a + b\pi$

[3 marks]

Answer _____ cm

- 8 A and B are points on a circle, centre O , radius 6 cm.
The chord AB has length $6\sqrt{3}$ cm.



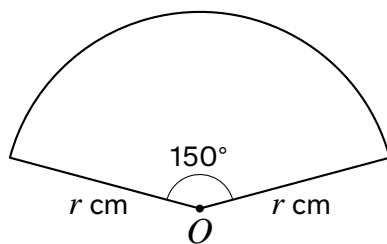
Not drawn accurately

Work out the area of the shaded segment.
Give your answer in the form $a\pi - b\sqrt{3}$ where a and b are integers.

[4 marks]

Answer _____ cm^2

- 9 The diagram shows a sector of a circle, centre O , radius r cm.



Not drawn accurately

The perimeter of the sector is 40 cm.

Work out the value of r .

Give your answer in the form $\frac{a}{b + c\pi}$ where a , b and c are integers.

[4 marks]

$r =$ _____