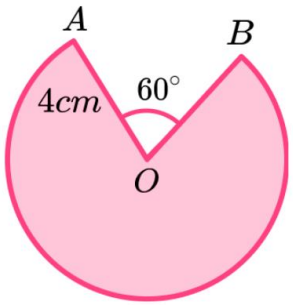
THIRD SPACE LEARNING

GCSE Exam Questions

Circles, Arcs and Sectors | Geometry & Measure

GCSE Exam Questions: Circles, Arcs and Sectors

1) AOB forms a sector with centre O.



The acute angle at AOB is 60° and the length OA = 4cm.

(a) What is the area of sector AOB in terms of π?

(3)

(b) What is the arc length of sector AOB?

Give your answer to 2 decimal places.

(3)

(c) What is the perimeter of the sector AOB?

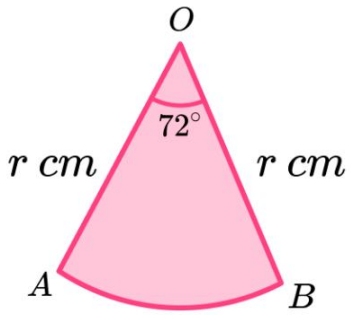
Give your answer to 3 significant figures.

(2)

(8 marks)

GCSE Exam Questions: Circles, Arcs and Sectors

2) AOB is a sector with angle 72°.



The perimeter of AOB is 40cm.

Calculate the value of r.

Give your answer to 3 significant figures.

(4 marks)

3) **(a)** The area of circle C is $49\pi\ cm^2$. What is the radius of the circle?

(1)

(b) What is the area of a semicircle S with the same radius as circle C?

Give your answer in terms of π.

(2)

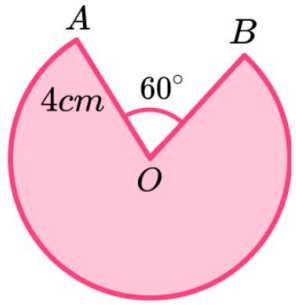
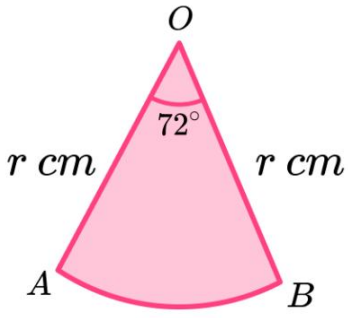
(c) What is the perimeter of the semicircle S?

Give your answer to 3 significant figures.

(5)

(8 marks)

GCSE Exam Questions: Circles, Arcs and Sectors Answers

	Question	Answer	Marks
1)	AOB forms a sector with centre O.  The acute angle at AOB is 60° and the length OA = 4cm.		
(a)	What is the area of sector AOB in terms of π?	300 **seen** $\frac{300}{360} \times \pi \times 4^2$ **oe** $\frac{40}{3}\pi$	**(1)** **(1)** **(1)**
(b)	What is the arc length of sector AOB? Give your answer to 2 decimal places.	$\frac{300}{360} \times \pi \times 8$ **oe** 20.94395102... 20.94 *cm*	**(1)** **(1)** **(1)**
(c)	What is the perimeter of the sector AOB? Give your answer to 3 significant figures.	20.9 + 8 **oe** 28.9	**(1)** **(1)**
2)	AOB is a sector with angle 72°.  The perimeter of AOB is 40*cm* Calculate the value of *r*. Give your answer to 3 significant figures.	$2r + (\frac{72}{360} \times \pi \times 2r) = 40$ **oe** $2r + \frac{2r}{5}\pi = 40$ $200 = 10r + 2r\pi$ $200 = r(10 + 2\pi)$ $r = 12.2826091...$ 12.3 *ft*	**(1)** **(1)** **(1)** **(1)**

GCSE Exam Questions: Circles, Arcs and Sectors Answers

	Question	Answer	Marks
3) (a)	The area of circle C is $49\pi\ cm^2$. What is the radius of the circle?	$7\ cm$	**(1)**
(b)	What is the area of a semicircle S with the same radius as circle C? Give your answer in terms of π.	$\frac{180}{360} \times \pi \times 7^2$ **oe** $\frac{49}{2}\pi\ cm^2$	**(1)** **(1)**
(c)	What is the perimeter of the semicircle S? Give your answer to 3 significant figures.	$\frac{180}{360} \times \pi \times 2 \times 7$ **oe** 7π **oe** $7\pi + 2 \times 7$ **oe** 35.99114858... 36.0 cm $(3sf)$	**(1)** **(1)** **(1)** **(1)** **(1)**

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