THIRD SPACE LEARNING

GCSE Exam Questions

Arcs and Sectors | Geometry & Measure

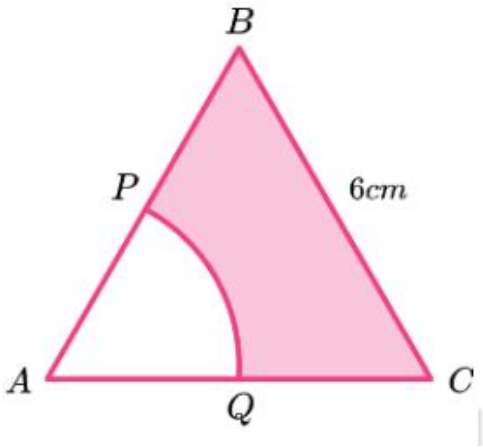
GCSE Exam Questions: Arcs and Sectors

1) The diagram shows an equilateral triangle ABC with sides of $6cm$.

P is the midpoint of AB

Q is the midpoint of AC

APQ is a sector of a circle with centre A.

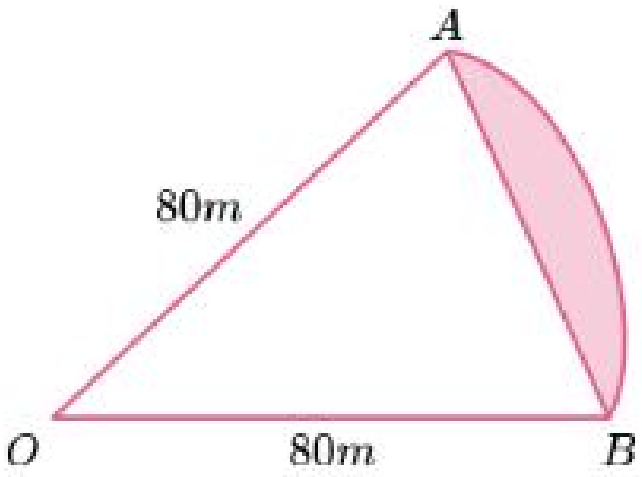


Calculate the area of the shaded region to 3 significant figures.

(6 marks)

GCSE Exam Questions: Arcs and Sectors

2) The sector of a circle with centre O has a radius of $80cm$. The two points A and B are connected by an arc and a chord.

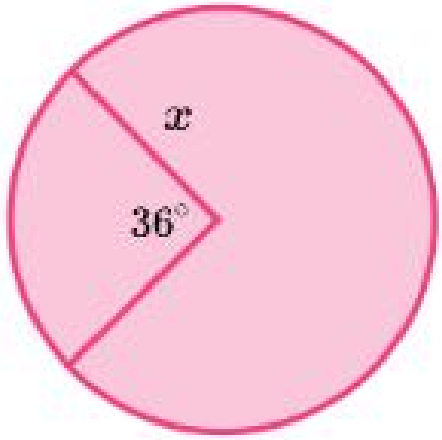


As angle $AOB = 35^{o}$, calculate the area of the shaded region to 3 significant figures.

(6 marks)

GCSE Exam Questions: Arc and Sectors

3) The major arc length of the circle below is $31.1cm$

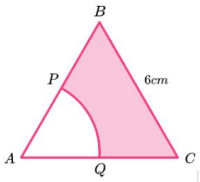
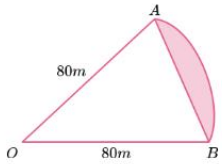
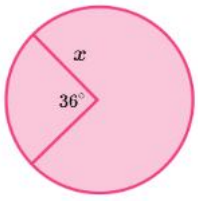


Find the length of x, the radius of the circle.

Give your answer to 1decimal place.

(4 marks)

GCSE Exam Questions: Arcs and Sectors Answers

	Question	Answer	Marks
1)	The diagram shows an equilateral triangle ABC with sides of $6cm$. P is the midpoint of AB Q is the midpoint of AC APQ is a sector of a circle with centre A.  Calculate the area of the shaded region to 3 significant figures.	60^o **seen** Area of Triangle: $\frac{1}{2} \times 6 \times 6 \times \sin(60) = 9\sqrt{3}$ Area of Sector: $\frac{60}{360} \times \pi \times 3^2$ $\frac{3}{2}\pi$ **oe** $9\sqrt{3} - \frac{3}{2}\pi = 10.87606829...$ $10.9cm^2$ (3sf)	**(1)** **(1)** **(1)** **(1)** **(1)** **(1)**
2)	The sector of a circle with centre O has a radius of $80cm$. The two points A and B are connected by an arc and a chord.  As angle $AOB = 35^o$, calculate the area of the shaded region to 3 significant figures.	Area of a Sector $(\frac{\theta}{360} \times \pi r^2)$ $\frac{35}{360} \times \pi \times 80^2$ $=1954.7687...$ Area of a Triangle $(\frac{1}{2}ab\sin(C))$ $\frac{1}{2} \times 80 \times 80\sin(35)$ $= 1835.4446...$ $1954.76... - 1835.44... = 119.3241659...$ $= 119.3\ cm^2$ (3sf)	 **(1)** **(1)** **(1)** **(1)** **(1)** **(1)**
3)	The major arc length of the circle below is $31.1cm$.  Find the length of x, the radius of the circle. Give your answer to 1 decimal place.	324 **seen** $\frac{324}{360} \times 2 \times \pi \times x = 31.3$ **oe** $x = 5.535055243...$ $x = 5.5\ cm$ $(1dp)$	**(1)** **(1)** **(1)** **(1)**

Where to go next?

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