FOUNDATION & HIGHER

SAME AT BOTH TIERS

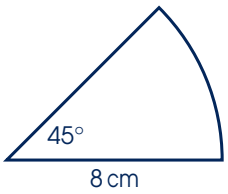
Name ..... Class .....

G18: Arcs and sectors

Arc lengths, angles and areas of sectors

20 marks · 25 minutes · Calculator allowed

1) A sector has radius 8 cm and angle 45°. Give your answers to 3 significant figures.



(a) Find its arc length.

..... cm

(2)

(b) Find its area.

..... cm^2

(2)

[Question 1: 4 marks]

2) A sector has radius 10 cm and angle 120°. Find its perimeter. Give your answer to 3 significant figures.

..... cm

[Question 2: 3 marks]

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3) A sector has area 50 cm^2 and radius 9 cm. Find its angle. Give your answer to 1 decimal place.

..... °

[Question 3: 3 marks]

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4) A sector has radius 7 cm and arc length 11 cm. Find its angle to the nearest degree.

..... °

[Question 4: 2 marks]

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5) A sector has radius 4 cm and angle 300°. Find its area. Give your answer to 3 significant figures.

..... cm^2

[Question 5: 2 marks]

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6) A sector has radius 6 cm and angle 90°. A chord joins the ends of its arc. Find the area of the segment between the chord and the arc. Give your answer to 3 significant figures.

..... cm^2

[Question 6: 3 marks]

7) A sector has radius 6 cm and angle 60°. Find its area in terms of π.

..... cm^2

[Question 7: 1 marks]

8) A sector has radius 12 cm and angle 30°. Find its arc length in terms of π.

..... cm

[Question 8: 1 marks]

9) What fraction of a circle is a sector with angle 72°?

.....

[Question 9: 1 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	(a) 6.28 (b) 25.1	(a) $\frac{45}{360} \times 2\pi \times 8$ (M1); A1. (b) $\frac{45}{360} \times \pi \times 64$ (M1); A1.
2	40.9	Arc 20.94 ... (M1); add 20 (M1); A1.
3	70.7	$\frac{\theta}{360} \times \pi \times 81 = 50$ (M1); rearrange (M1); A1.
4	90	$\frac{11}{14\pi} \times 360$ (M1); A1.
5	41.9	$\frac{300}{360} \times 16\pi$ (M1); A1.
6	10.3	Sector 9π (M1); triangle 18 (M1); A1.
7	6π	B1.
8	2π	B1.
9	$\frac{1}{5}$	B1.