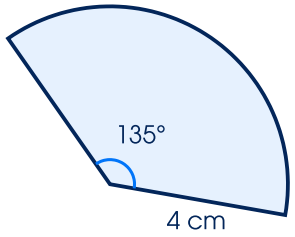
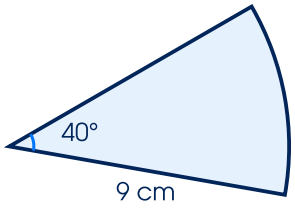
GCSE HIGHER · REVISION MAT 5

Arc length and sector area

1 Find the arc length, to 1 d.p.



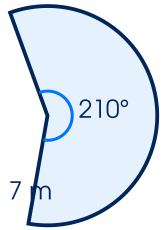
2 Find the area of the sector, to 1 d.p.



3 Explain why the sector area formula uses $\frac{\theta}{360}$.

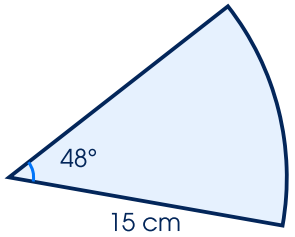
4 A lawn is this sector.

Edging goes all the way round.



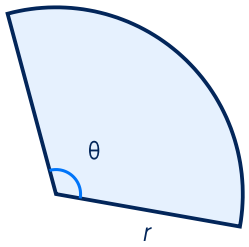
Find the length of edging.

5 Show that a sector of radius 15 cm and angle 48° has arc length 4π cm.



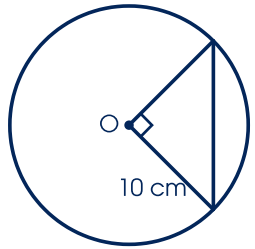
6 A sector has arc length equal to twice its radius.

Find its angle.



7 Show that doubling the radius of a sector, with the same angle, doubles its arc length.

8 A chord subtends 90° at the centre of a circle of radius 10 cm.



Find the area of the minor segment.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Arc length and sector area

1 3π

9.4 cm

2 9π

28.3 cm²

3 **The sector is that fraction of the whole circle.**

4 Arc $= \frac{210}{360} \times 14\pi = 25.66$

39.7 m

5 $\frac{48}{360} \times 30\pi$

$= 4\pi$

6 $\frac{\theta}{360} \times 2\pi r = 2r$

$\theta = 114.6°$

7 **Arc $= \frac{\theta}{360} \times 2\pi r$ is proportional to r.**

8 Sector 25π, triangle 50

28.5 cm²

Mr&Mrs MATHS