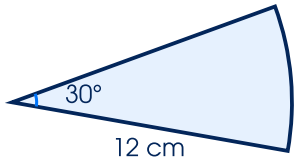
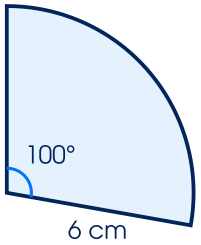
GCSE HIGHER · REVISION MAT 3

Arc length and sector area

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



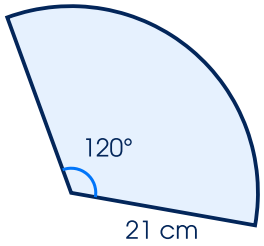
2 Find the area of the sector, to 1 d.p.



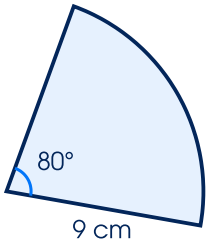
3 Explain why the arc of a semicircle of radius 5 cm is 5π cm.

4 A fan opens out to a sector of angle 120° and radius 21 cm.

Find its area.

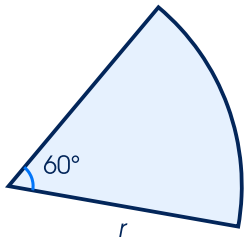


5 Show that a sector of radius 9 cm and angle 80° has arc length 4π cm.

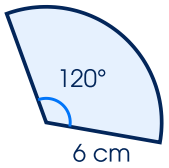


6 A sector has area 50 cm² and angle 60°.

Find its radius.

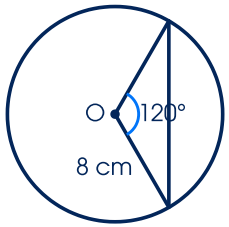


7 Show that a sector of radius 6 cm with angle 120° has the same area as a sector of radius 4 cm with angle 270°.





8 Find the area of the shaded segment.



Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Arc length and sector area

1 2π

6.3 cm

2 10π

31.4 cm²

3 **Half the circumference:** $\frac{1}{2} \times 10\pi$

4 $\frac{1}{3} \times 441\pi = 147\pi$

461.8 cm²

5 $\frac{80}{360} \times 18\pi$

$= 4\pi$

6 $\frac{1}{6}\pi r^2 = 50$

$r^2 = 95.5$

9.77 cm

7 $\frac{1}{3} \times 36\pi = 12\pi$

$\frac{3}{4} \times 16\pi = 12\pi$

8 Sector $\frac{64\pi}{3} = 67.02$

Triangle $\frac{1}{2} \times 64 \times \sin 120° = 27.71$

39.3 cm²

Mr&Mrs MATHS