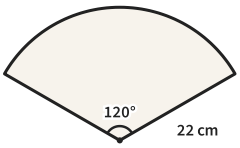
Interleaved: arc length and sector area

ANSWERS

1

A paper fan opens into this sector.
Ribbon is sewn along its curved edge only.
How long is the ribbon? Give your answer to 1 decimal place.



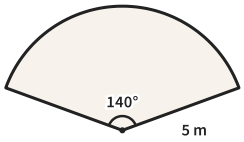
Which method? Arc length | Sector area | Perimeter of a sector

$120/360 \times 2 \times \pi \times 22$

Answer 46.1 cm

2

A garden sprinkler waters this sector of lawn. What area of lawn does it water?
Give your answer to 1 decimal place.



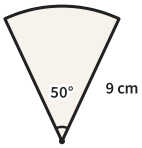
Which method? Arc length | Sector area | Perimeter of a sector

$140/360 \times \pi \times 5^2$

Answer 30.5 m^2

3

Find the perimeter of this sector.
Give your answer to 1 decimal place.



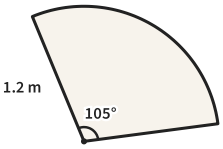
Which method? Arc length | Sector area | Perimeter of a sector

$50/360 \times 2 \times \pi \times 9 = 7.85..., + 9 + 9$

Answer 25.9 cm

4

A garden gate 1.2 m wide swings open through 105°. How far does the latch at its end travel? Give your answer to 1 decimal place.



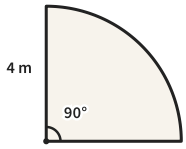
Which method? Arc length | Sector area | Perimeter of a sector

$105/360 \times 2 \times \pi \times 1.2$

Answer 2.2 m

5

A flower bed is a quarter circle.
Edging goes all the way round it.
How much edging is needed?
Give your answer in terms of π.



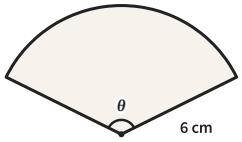
Which method? Arc length | Sector area | Perimeter of a sector

$90/360 \times 2 \times \pi \times 4 = 2\pi, + 4 + 4$

Answer $(2\pi + 8)$ m

6

The area of this sector is 40 cm^2.
Find the angle θ. Give your answer to 1 decimal place.



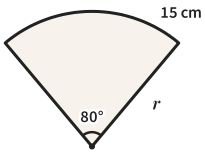
Which method? Arc length | Sector area | Perimeter of a sector

$\pi \times 6^2 = 113.09..., 40 \div 113.09... \times 360$

Answer 127.3°

7

The arc of this sector is 15 cm long.
Find the radius r. Give your answer to 1 decimal place.



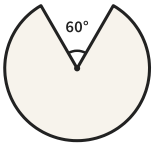
Which method? Arc length | Sector area | Perimeter of a sector

$80/360 \times 2 \times \pi \times r = 15, r = 15 \div 1.396...$

Answer 10.7 cm

8

A badge is a circle of radius 2.5 cm with a 60° sector cut out. Find the area of the badge.
Give your answer to 1 decimal place.



Which method? Arc length | Sector area | Perimeter of a sector

$360 - 60 = 300, 300/360 \times \pi \times 2.5^2$

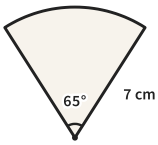
Answer 16.4 cm^2

Interleaved: arc length and sector area *further practice*

ANSWERS

9

Find the arc length of this sector.
Give your answer to 1 decimal place.



$65/360 \times 2 \times \pi \times 7$

Answer 7.9 cm

10

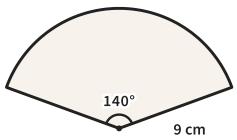
A shop sign is a sector of a circle with a radius of 60 cm and an angle of 100°.
A strip of lights goes all the way round its edge. How long is the strip?
Give your answer to 1 decimal place.

arc $100/360 \times 2 \times \pi \times 60 = 104.71..., + 120$

Answer 224.7 cm

11

Find the area of this sector.
Give your answer in terms of π.



$140/360 \times \pi \times 81 = 31.5\pi$

Answer 31.5π cm^2

12

A railway line bends round an arc of a circle with a radius of 450 m. The line turns through 35°. How long is the curved part of the track? Give your answer to 1 decimal place.

$35/360 \times 2 \times \pi \times 450$

Answer 274.9 m

13

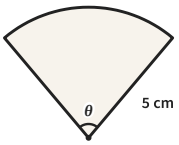
A sector has an angle of 72° and an area of 45 cm^2. Find its radius. Give your answer to 1 decimal place.

$72/360 \times \pi \times r^2 = 45, r^2 = 71.6...$

Answer 8.5 cm

14

The perimeter of this sector is 17 cm.
Find the angle θ. Give your answer to 1 decimal place.

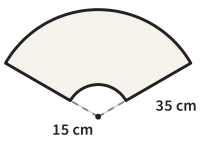


arc $= 17 - 5 - 5 = 7, 7 \div (2 \times \pi \times 5) \times 360$

Answer 80.2°

15

A windscreen wiper turns through 120°.
Its blade cleans the glass from 15 cm to 50 cm away from the pivot. What area of glass does it clean? Give your answer to 1 decimal place.

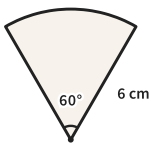


$120/360 \times \pi \times 50^2 - 120/360 \times \pi \times 15^2$

Answer 2382.4 cm^2

16

Tom says the perimeter of this sector is 6.3 cm. Explain his mistake and find the correct perimeter. Give your answer to 1 decimal place.



6.3 is only the arc: $6.28... + 6 + 6$

Answer 18.3 cm