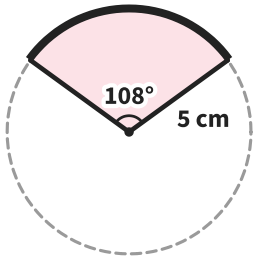
Arc Length

ANSWERS

1

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



Arc = $\frac{108}{360}$ × π × 10 (circumference)

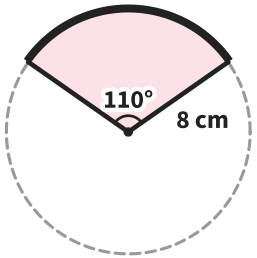
fraction of the circle

= 9.424...

Answer 9.4 cm

2

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



Arc = $\frac{110}{360}$ × π × 16 (circumference)

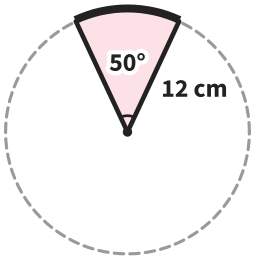
fraction of the circle

= 15.358...

Answer 15.4 cm

3

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



Arc = $\frac{50}{360}$ × π × 24 (circumference)

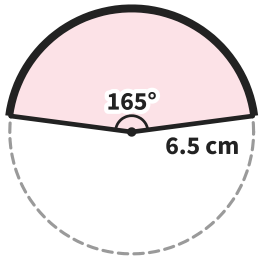
fraction of the circle

= 10.471...

Answer 10.5 cm

4

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



Arc = $\frac{165}{360}$ × π × 13 (circumference)

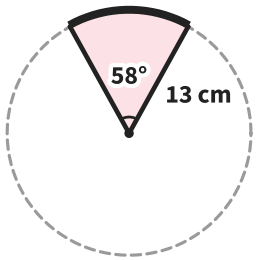
fraction of the circle

= 18.718...

Answer 18.7 cm

5

Find the arc length. Give your answer to 2 decimal places.

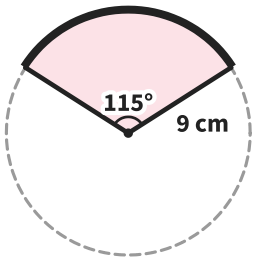


58/360 × π × 26 = 13.159...

Answer 13.16 cm

6

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



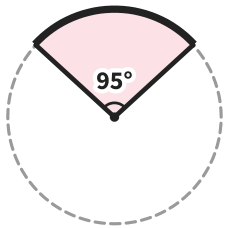
115/360 × π × 18 = 18.064...

18.064... + 9 + 9 = 36.064...

Perimeter 36.1 cm

7

This sector is cut from a circle with a diameter of 16 cm. Find the perimeter of the sector. Give your answer to 1 decimal place.



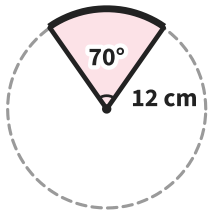
95/360 × π × 16 = 13.264...

radius 8: 13.264... + 8 + 8 = 29.264...

Perimeter 29.3 cm

8

Amara works out the arc length as 70/360 × π × 12 = 7.3 cm.
Explain her mistake, then find the arc length to 1 decimal place.



12 is the radius: π × d needs 24

70/360 × π × 24 = 14.660...

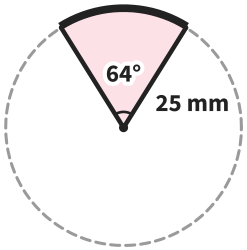
Answer 14.7 cm

Arc Length *further practice*

ANSWERS

9

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

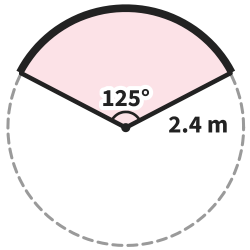


64/360 × π × 50 = 27.925...

Answer 27.9 mm

10

Find the arc length. Give your answer to 2 decimal places.

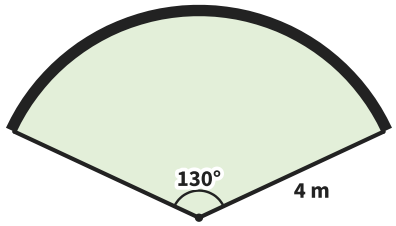


125/360 × π × 4.8 = 5.235...

Answer 5.24 m

11

A lawn is a sector of a circle with a radius of 4 m and an angle of 130°.
Edging goes all the way round the lawn.
How much edging is needed?
Give your answer to 1 decimal place.



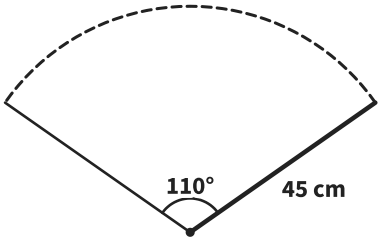
130/360 × π × 8 = 9.075...

9.075... + 4 + 4 = 17.075...

Answer 17.1 m

12

The tip of a windscreen wiper is 45 cm from its pivot. The wiper turns through 110°. How far does the tip travel?
Give your answer to 1 decimal place.

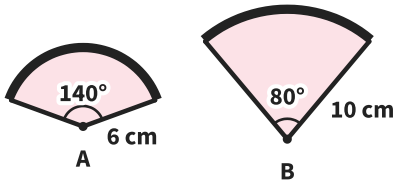


110/360 × π × 90 = 86.393...

Answer 86.4 cm

13

Which sector has the bigger perimeter, A or B? Show your working.



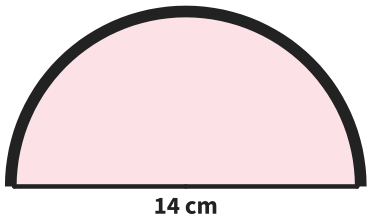
A: 14.66... + 6 + 6 = 26.7 cm

B: 13.96... + 10 + 10 = 34.0 cm

Answer B

14

This semicircle has a diameter of 14 cm.
Find its perimeter. Give your answer to 1 decimal place.



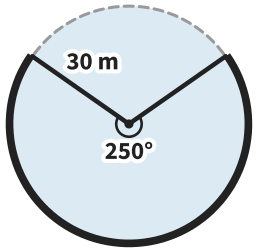
180/360 × π × 14 = 21.991...

21.991... + 14 = 35.991...

Perimeter 36.0 cm

15

Sam walks round the edge of a circular pond with a radius of 30 m, through an angle of 250° at its centre. How far does Sam walk? Give your answer to 1 decimal place.



250/360 × π × 60 = 130.899...

Answer 130.9 m

16

Is Leah right? Use sectors with a radius of 5 cm and angles of 60° and 120° to explain.

> **Leah**
> If I double the angle of a sector, its perimeter doubles too.

60°: 5.235... + 10 = 15.2 cm

120°: 10.471... + 10 = 20.5 cm: the arc doubles, the radii don't

Answer No