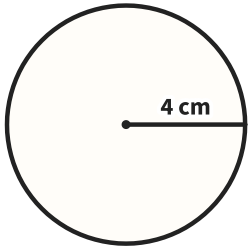
Circumference and Area of a Circle

ANSWERS

1

Work out (a) the circumference and (b) the area. Give your answers to 1 decimal place.



$r =$ 4 cm $d =$ 8 cm

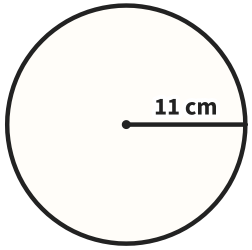
$C = \pi \times d =$ $\pi \times 8 = 25.132...$

$A = \pi \times r^2 =$ $\pi \times 4^2 = 50.265...$

(a) 25.1 cm (b) 50.3 cm²

2

Work out (a) the circumference and (b) the area. Give your answers to 1 decimal place.



$r =$ 11 cm $d =$ 22 cm

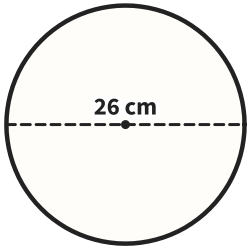
$C = \pi \times d =$ $\pi \times 22 = 69.115...$

$A = \pi \times r^2 =$ $\pi \times 11^2 = 380.132...$

(a) 69.1 cm (b) 380.1 cm²

3

Work out (a) the circumference and (b) the area. Give your answers to 1 decimal place.



$r =$ 13 cm $d =$ 26 cm

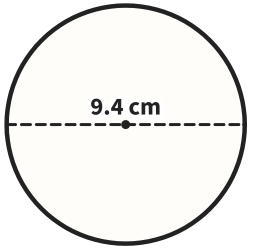
$C = \pi \times d =$ $\pi \times 26 = 81.681...$

$A = \pi \times r^2 =$ $\pi \times 13^2 = 530.929...$

(a) 81.7 cm (b) 530.9 cm²

4

Work out (a) the circumference and (b) the area. Give your answers to 1 decimal place.



$r =$ 4.7 cm $d =$ 9.4 cm

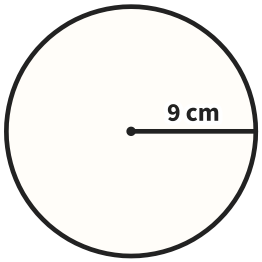
$C = \pi \times d =$ $\pi \times 9.4 = 29.530...$

$A = \pi \times r^2 =$ $\pi \times 4.7^2 = 69.397...$

(a) 29.5 cm (b) 69.4 cm²

5

Work out (a) the circumference and (b) the area. Give your answers in terms of π.



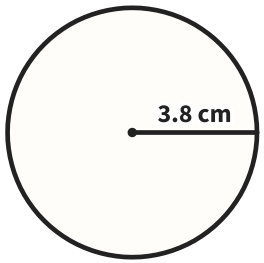
$C = \pi \times 18 = 18\pi$

$A = \pi \times 9^2 = 81\pi$

(a) 18π cm (b) 81π cm²

6

Work out (a) the circumference and (b) the area. Give your answers to 2 decimal places.



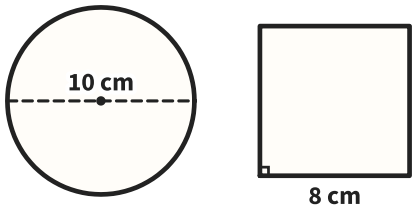
$C = \pi \times 7.6 = 23.876...$

$A = \pi \times 3.8^2 = 45.364...$

(a) 23.88 cm (b) 45.36 cm²

7

Which is longer: the circumference of the circle, or the perimeter of the square? Show how you know.



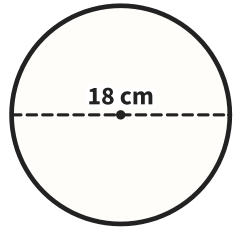
circle: $\pi \times 10 = 31.4$ cm

square: $4 \times 8 = 32$ cm

Answer the perimeter of the square

8

A circle has a diameter of 18 cm. Tomasz works out its area as $\pi \times 18^2 = 1017.9$ cm². Explain his mistake, then work out the area. Give your answer to 1 decimal place.



18 is the diameter: the radius is 9

$\pi \times 9^2 = 254.469...$

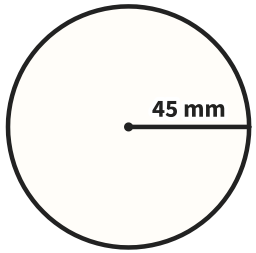
Answer 254.5 cm²

Circumference and Area of a Circle *further practice*

ANSWERS

9

Work out the area of this circle.
Give your answer to 1 decimal place.

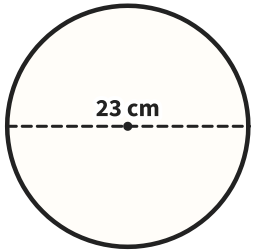


$\pi \times 45^2 = 6361.725...$

Answer 6361.7 mm²

10

A round cake tin has a diameter of 23 cm.
A ribbon goes once round the outside of the tin. How long is the ribbon?
Give your answer to 1 decimal place.

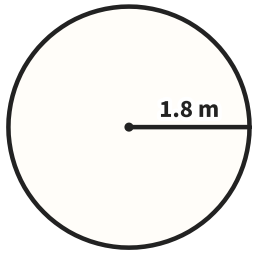


$\pi \times 23 = 72.256...$

Answer 72.3 cm

11

A round trampoline mat has a radius of 1.8 m. Work out the area of the mat.
Give your answer to 2 decimal places.

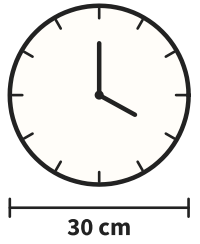


$\pi \times 1.8^2 = 10.178...$

Answer 10.18 m²

12

A round clock face measures 30 cm across, through its centre. Work out (a) the distance round its edge and (b) its area.
Give your answers to 1 decimal place.

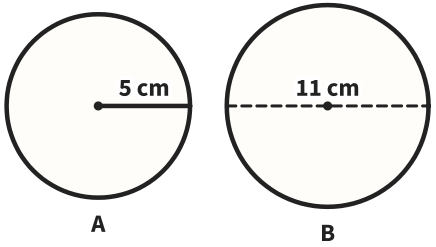


$r = 15$, $C = \pi \times 30$, $A = \pi \times 15^2$

(a) 94.2 cm **(b)** 706.9 cm²

13

Which circle has the bigger area, A or B?
By how much? Give your answer to 1 decimal place.



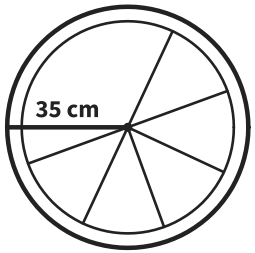
A: $\pi \times 5^2 = 78.539...$

B: $\pi \times 5.5^2 = 95.033...$

Answer B, by 16.5 cm²

14

A bike wheel has a radius of 35 cm.
How far does the bike move, in metres, when the wheel turns 10 times?
Give your answer to 1 decimal place.



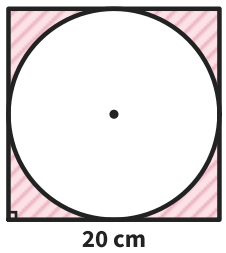
one turn: $\pi \times 70 = 219.911...$ cm

10 turns: 2199.114... cm

Answer 22.0 m

15

The biggest possible circle is cut from a square of side 20 cm. Work out the area of the shaded part that is left.
Give your answer to 1 decimal place.



square: $20 \times 20 = 400$

circle: $\pi \times 10^2 = 314.159...$

Answer 85.8 cm²

16

Is Priya right? Use circles with diameters of 5 cm and 10 cm to explain.

> **Priya**
> If I double the diameter of a circle, its circumference doubles too.

$\pi \times 5 = 15.7$ cm, $\pi \times 10 = 31.4$ cm

31.4 is 2×15.7: $\pi \times 2d = 2 \times \pi d$

Answer Yes, it doubles