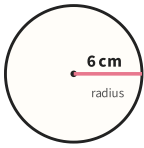


Area of a Circle

1

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



$$r = 6 \text{ cm}$$

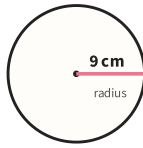
$$r^2 = 6^2 = 36$$

$$A = \pi \times r^2 = \pi \times 36 = 113.1$$

Answer 113.1 cm^2

2

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



$$r = 9 \text{ cm}$$

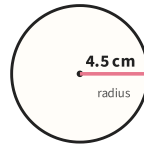
$$r^2 = 9^2 = 81$$

$$A = \pi \times r^2 = \pi \times 81 = 254.5$$

Answer 254.5 cm^2

3

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



$$r = 4.5 \text{ cm}$$

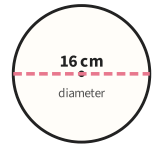
$$r^2 = 4.5^2 = 20.25$$

$$A = \pi \times r^2 = \pi \times 20.25 = 63.6$$

Answer 63.6 cm^2

4

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



$$r = 16 \div 2 = 8 \text{ cm}$$

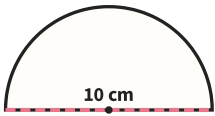
$$r^2 = 8^2 = 64$$

$$A = \pi \times r^2 = \pi \times 64 = 201.1$$

Answer 201.1 cm^2

5

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



$$r = 10 \div 2 = 5$$

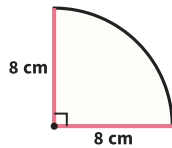
$$\pi \times 5^2 = 78.54$$

$$78.54 \div 2 = 39.3$$

Answer 39.3 cm^2

6

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



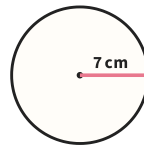
$$\pi \times 8^2 = 201.06$$

$$201.06 \div 4 = 50.3$$

Answer 50.3 cm^2

7

Work out the area of this circle.
Give your answer in terms of π .



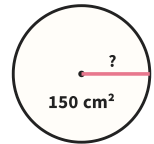
$$A = \pi \times 7^2$$

$$= 49 \times \pi$$

Answer $49\pi \text{ cm}^2$

8

The area of this circle is 150 cm^2 .
Work out its radius. Give your answer to 1 decimal place.



$$150 = \pi \times r^2$$

$$r^2 = 150 \div \pi = 47.75$$

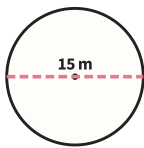
$$r = \sqrt{47.75}$$

Answer 6.9 cm

Area of a Circle further practice

9

A circular pond has a diameter of 15 m.
Work out its area. Give your answer to 1 decimal place.



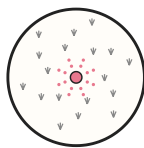
$$r = 15 \div 2 = 7.5$$

$$\pi \times 7.5^2 = 176.7$$

Answer 176.7 m^2

10

A sprinkler in the middle of a lawn turns round and waters the grass up to 3.5 m away. What area of grass does it water? Give your answer to 1 decimal place.



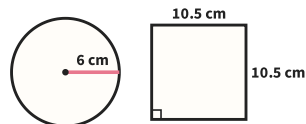
$$r = 3.5$$

$$\pi \times 3.5^2 = 38.5$$

Answer 38.5 m^2

11

Which has the bigger area, the circle or the square? Show how you know.



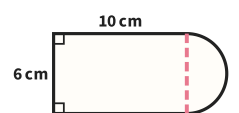
$$\text{circle: } \pi \times 6^2 = 113.1 \text{ cm}^2$$

$$\text{square: } 10.5 \times 10.5 = 110.25 \text{ cm}^2$$

Answer the circle, by 2.8 cm^2

12

This shape is a rectangle with a semicircle on one end. Work out its area. Give your answer to 1 decimal place.



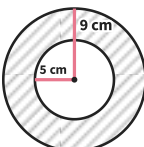
$$\text{rectangle: } 10 \times 6 = 60$$

$$\text{semicircle: } \pi \times 3^2 \div 2 = 14.14$$

Answer 74.1 cm^2

13

The shaded ring is between two circles with the same centre. Work out the shaded area. Give your answer to 1 decimal place.



$$\pi \times 9^2 = 254.47$$

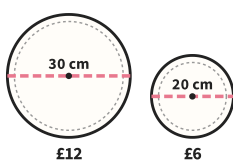
$$\pi \times 5^2 = 78.54$$

$$254.47 - 78.54 = 175.93$$

Answer 175.9 cm^2

14

A pizza shop sells two round pizzas. Which one gives you more pizza for each £1? Show how you know.



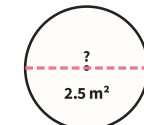
$$30 \text{ cm: } \pi \times 15^2 \div 12 = 58.9 \text{ cm}^2$$

$$20 \text{ cm: } \pi \times 10^2 \div 6 = 52.4 \text{ cm}^2$$

Answer the 30 cm pizza

15

A round rug has an area of 2.5 m^2 . Work out its diameter. Give your answer to 1 decimal place.



$$r^2 = 2.5 \div \pi = 0.796$$

$$r = \sqrt{0.796} = 0.892$$

$$d = 2 \times 0.892 = 1.784$$

Answer 1.8 m

16

Is Sam right? Use a circle of radius 3 cm and a circle of radius 6 cm to explain.

Sam
If I double the radius of a circle, its area doubles too.

$$\pi \times 3^2 = 28.3 \text{ cm}^2$$

$$\pi \times 6^2 = 113.1 \text{ cm}^2$$

$$36 \div 9 = 4, \text{ so 4 times as big}$$

Answer No, it is 4 times as big