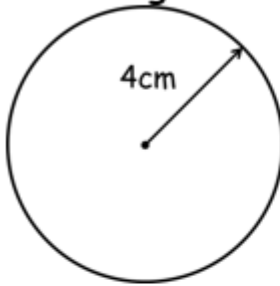
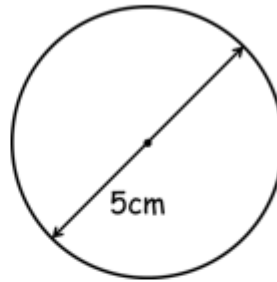


Year 9 Core – Area and Circumference of circles

Calculate the area and circumference of the circles with the following dimensions:

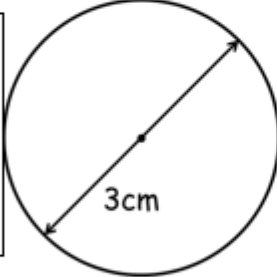


$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times 4^2 \\
 &= \underline{\hspace{2cm}} \text{cm}^2 \\
 C &= \pi d \\
 &= \pi \times 8 \\
 &= \underline{\hspace{2cm}} \text{cm}
 \end{aligned}$$

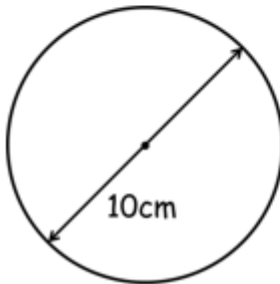
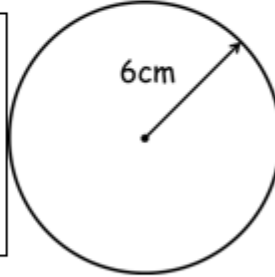


$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times 2.5^2 \\
 &= \underline{\hspace{2cm}} \text{cm}^2 \\
 C &= \pi d \\
 &= \pi \times 5 \\
 &= \underline{\hspace{2cm}} \text{cm}
 \end{aligned}$$

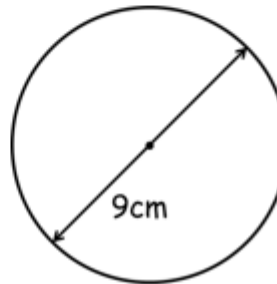
$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times 1.5^2 \\
 &= \underline{\hspace{2cm}} \text{cm}^2 \\
 C &= \pi d \\
 &= \pi \times 3 \\
 &= \underline{\hspace{2cm}} \text{cm}
 \end{aligned}$$



$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times \underline{\hspace{1cm}}^2 \\
 &= \underline{\hspace{2cm}} \text{cm}^2 \\
 C &= \pi d \\
 &= \pi \times \underline{\hspace{1cm}} \\
 &= \underline{\hspace{2cm}} \text{cm}
 \end{aligned}$$



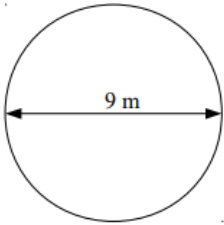
$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times \underline{\hspace{1cm}}^2 \\
 &= \underline{\hspace{2cm}} \text{cm}^2 \\
 C &= \pi d \\
 &= \pi \times \underline{\hspace{1cm}} \\
 &= \underline{\hspace{2cm}} \text{cm}
 \end{aligned}$$



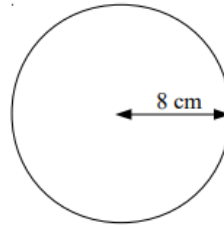
$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times \underline{\hspace{1cm}}^2 \\
 &= \underline{\hspace{2cm}} \text{cm}^2 \\
 C &= \pi d \\
 &= \pi \times \underline{\hspace{1cm}} \\
 &= \underline{\hspace{2cm}} \text{cm}
 \end{aligned}$$

<p>1. Calculate the area</p> <div style="text-align: center; margin-top: 20px;"> </div>	<p>2. Find the circumference</p> <div style="text-align: center; margin-top: 20px;"> </div>
<p>3. Find the circumference</p> <div style="text-align: center; margin-top: 20px;"> </div>	<p>4. What is the area of this circle?</p> <div style="text-align: center; margin-top: 20px;"> </div>

5. A circle has a diameter of 9 m.
Work out the area of the circle.
Give your answer correct to 1 decimal place.



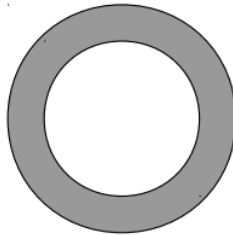
6. A circle has a radius of 8 cm.
Work out the area of the circle.
Give your answer in terms of π



7. The diagram shows a shaded ring formed by cutting a smaller circle out of a larger circle.

The radius of the smaller circle is 6 cm.
The diameter of the larger circle is 15 cm.

Find the area of the shaded ring.

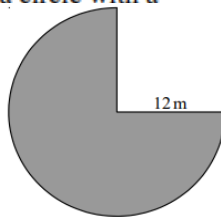


- 8 a. A circle has a diameter of 12 mm.
Work out the circumference of the circle.
Give your answer in terms of π

- b. A circle has a radius of 6.5 cm.
Work out the circumference of the circle.
Give your answer correct to 2 decimal places.

9. The diagram shows three quarters of a circle with a radius of 12 metres.

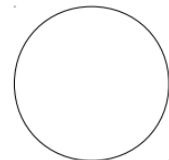
Find the perimeter of the shape.



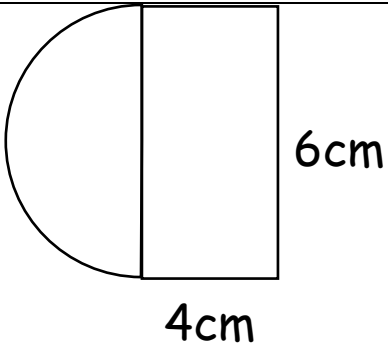
10. A circular field has a diameter of 32 metres.
A farmer wants to build a fence around the edge of the field.

Each metre of fence will cost £15.95

Work out the total cost of the fence.



11



Calculate the area of compound shapes by splitting them up into more recognisable shapes.

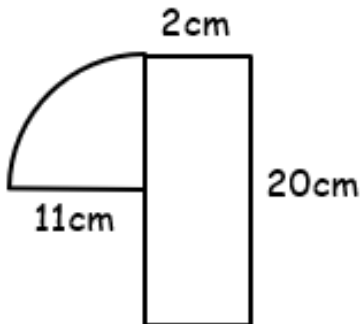
This question has been started for you.

Area of **rectangle** = $b \times h$

Area of **semi-circle** = $\frac{\pi r^2}{2}$

Total area = **rectangle** + **semi-circle**

12



Area of **rectangle** = $b \times h$

Area of **quarter-circle** = $\frac{\pi r^2}{4}$

Total area =
rectangle + **quarter circle**