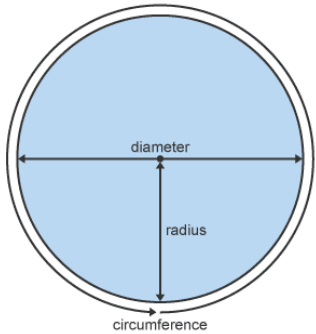


Level 4 Circle: Circumference and Area



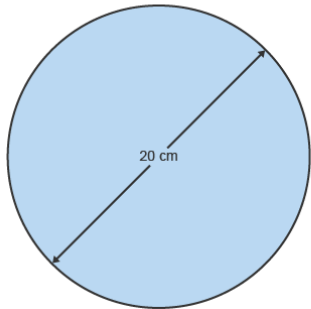
Circumference of a circle

For any circle with a diameter, d , the circumference, C , is found by using the **formula**:

$$C = \pi d$$

where $\pi = 3.14$

Calculate the circumference of the circle shown below.

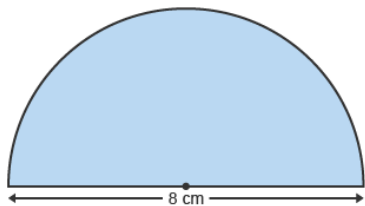


$$\begin{aligned} C &= \pi d \\ &= 3.14 \times 20 \\ &= 62.8 \text{ cm} \end{aligned}$$

The perimeter of a semicircle

Remember that the **perimeter** is the distance round the outside.

A semicircle has two edges. One is half of a circumference and the other is a diameter.



$$\begin{aligned} C &= \pi d \\ &= 3.14 \times 8 \\ &= 25.12 \text{ cm} \end{aligned}$$

Remember this is the circumference of the whole circle, so now we need to half this answer.

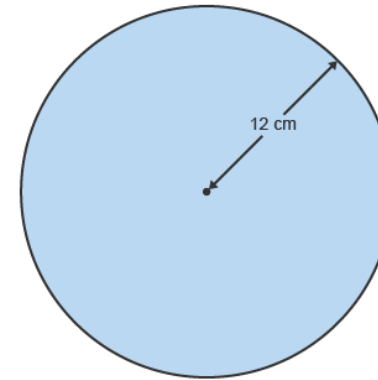
$$25.12 \div 2 = 12.56 \text{ cm}$$

$$\text{Total perimeter} = 12.56 + 8 = 20.56 \text{ cm}$$

Area of a circle

For any circle with radius, r , the area, A , is found using the formula:

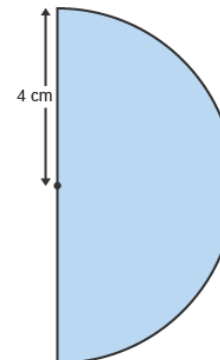
$$A = \pi r^2$$



$$\begin{aligned} A &= \pi r^2 \\ &= 3.14 \times 12 \times 12 \\ &= 452.16 \text{ cm}^2 \end{aligned}$$

The area of a semicircle

A semicircle is just half of a circle. To find the **area** of a semicircle we calculate the area of the whole circle and then half the answer.



$$\begin{aligned} A &= \pi r^2 \\ &= 3.14 \times 4 \times 4 \\ &= 50.24 \text{ cm}^2 \end{aligned}$$

$$\text{Area of semicircle} = 50.24 \div 2 = 25.12 \text{ cm}^2$$