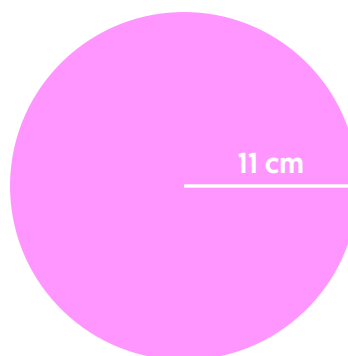


Area and circumference of a circle in terms of π

Worksheet | Answers

1. Find the area of this circle, leaving your answer in terms of π

$$\begin{aligned}\text{Area} &= \pi \times 11 \times 11 \\ &= 121\pi \text{ cm}^2\end{aligned}$$

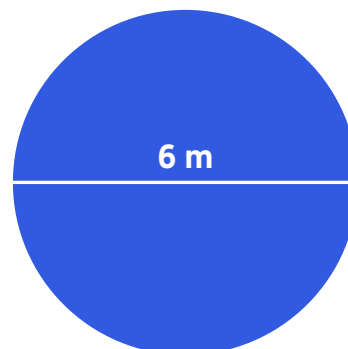


2. Calculate the circumference of the same circle, leaving your answer in terms of π

$$\begin{aligned}\text{Diameter of circle} &= 22 \text{ cm} \\ \text{Circumference} &= 22\pi \text{ cm}\end{aligned}$$

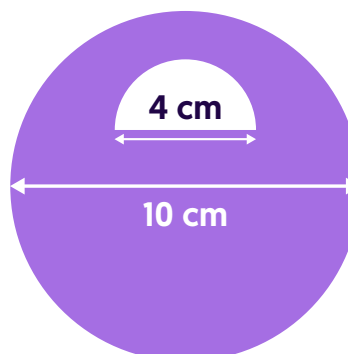
3. Calculate the area and circumference of this circle, leaving your answer in terms of π

$$\begin{aligned}\text{Circumference} &= 6\pi \text{ m} \\ \text{Area} &= 3^2 \pi \text{ m}^2 \\ &= 9\pi \text{ m}^2\end{aligned}$$



4. Calculate the shaded area. Leave your answer in terms of π

$$\begin{aligned}\text{Circle} &= \pi \times 5^2 = 25\pi \\ \text{Semi-circle} &= (\pi \times 2^2) / 2 = 4\pi \div 2 = 2\pi \\ \text{Shaded area} &= 25\pi - 2\pi = 23\pi \text{ cm}^2\end{aligned}$$



Challenge

5. This semi-circle has a diameter of 20 cm. Show that the perimeter of this semi-circle is $10(\pi + 2)$ cm

Circumference of whole circle = $\pi \times 20$

Curved part of semi-circle = $\pi \times 20 \div 2 = 10\pi$

Add on the bottom side = $10\pi + 20$

Factorise = $10(\pi + 2)$

