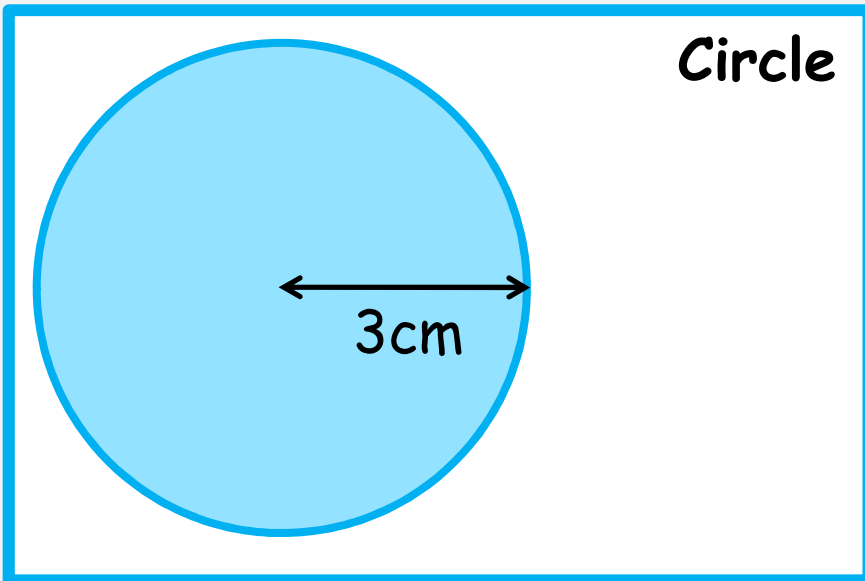
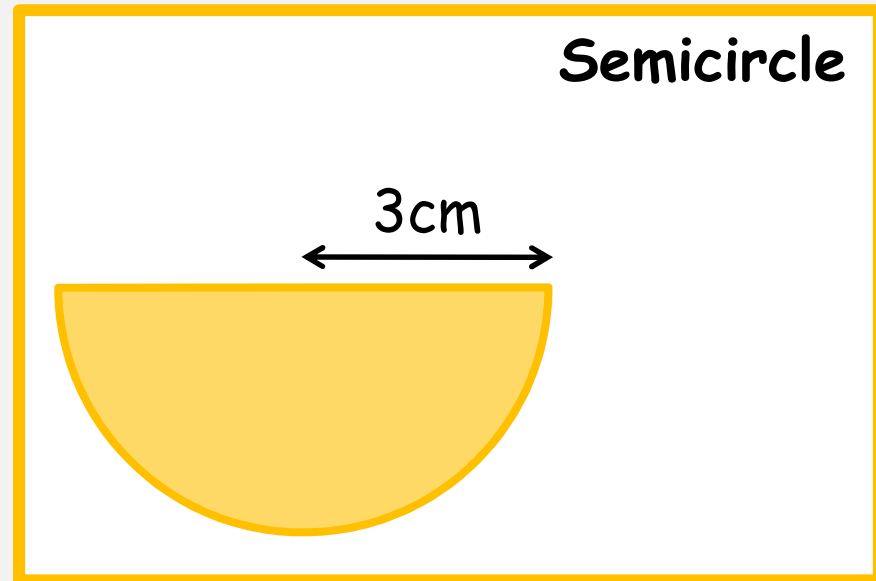


Calculate the arc length and area of each shape.

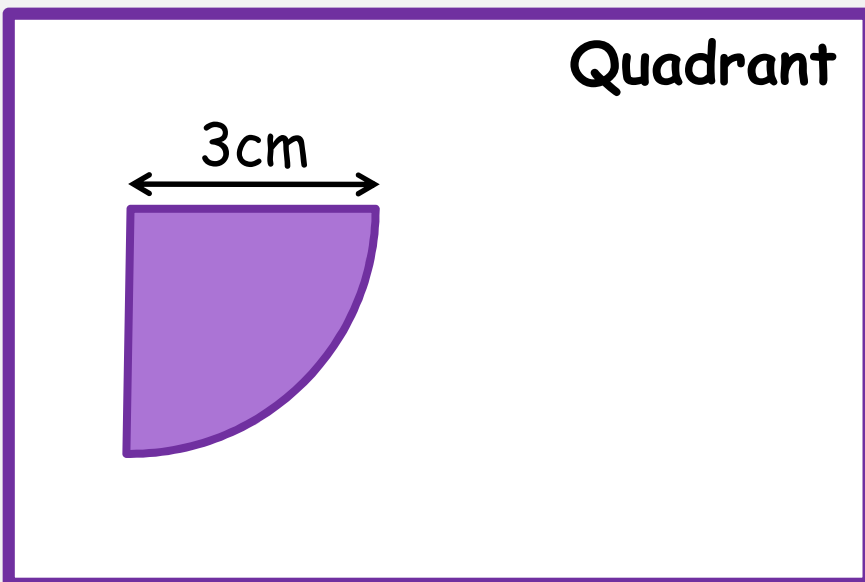
Circle



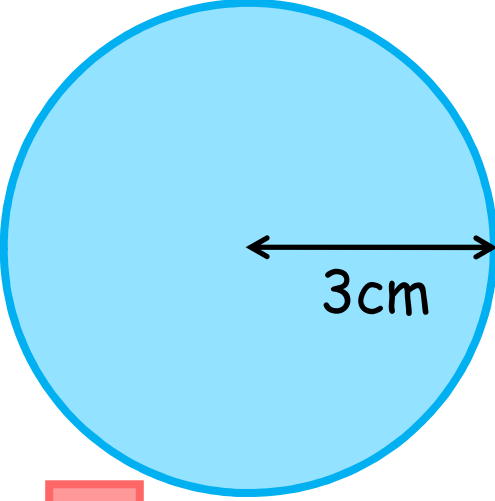
Semicircle



Quadrant



Calculate the arc length and area of each shape.

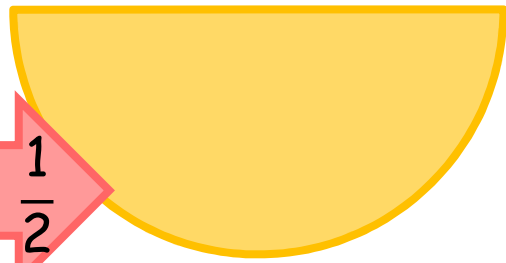


Circle

Arc length
18.8 cm

Area
28.3 cm²

3cm



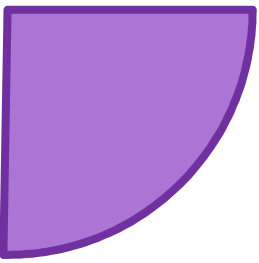
Semicircle

Arc length
9.4 cm

Area
14.15 cm²

3cm

$\frac{1}{2}$



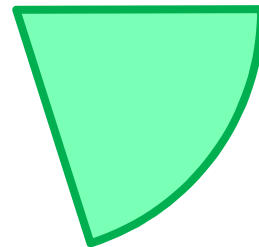
Quadrant

Arc length
4.7 cm

Area
7.075 cm²

3cm

$\frac{1}{4}$

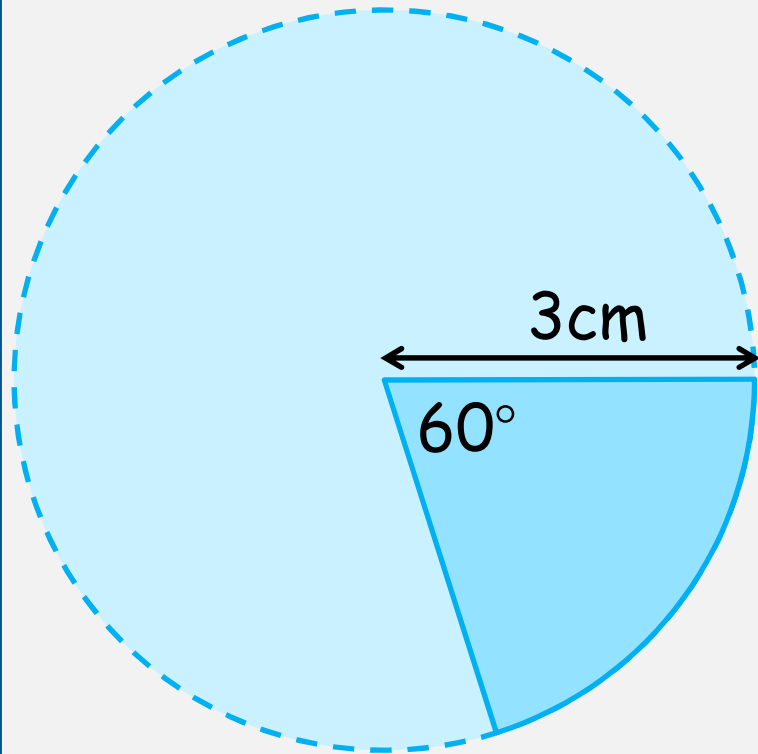


Sector

3cm

How can we extend to finding any part of a circle?

For a sector of 60° :



A full circle is 360°
The sector angle is 60°

$$\begin{aligned}\text{Arc length of sector} &= \frac{60}{360} \times \pi \times 2r \\ &= 3.13\text{cm}\end{aligned}$$

$$\begin{aligned}\text{Area of sector} &= \frac{60}{360} \times \pi \times r^2 \\ &= 47.2\text{cm}^2\end{aligned}$$

$$\text{Arc length (circumference) of full circle} = \pi \times 2r = 18.8\text{cm}$$

$$\text{Area of full circle} = \pi \times r^2 = 28.3\text{cm}^2$$