

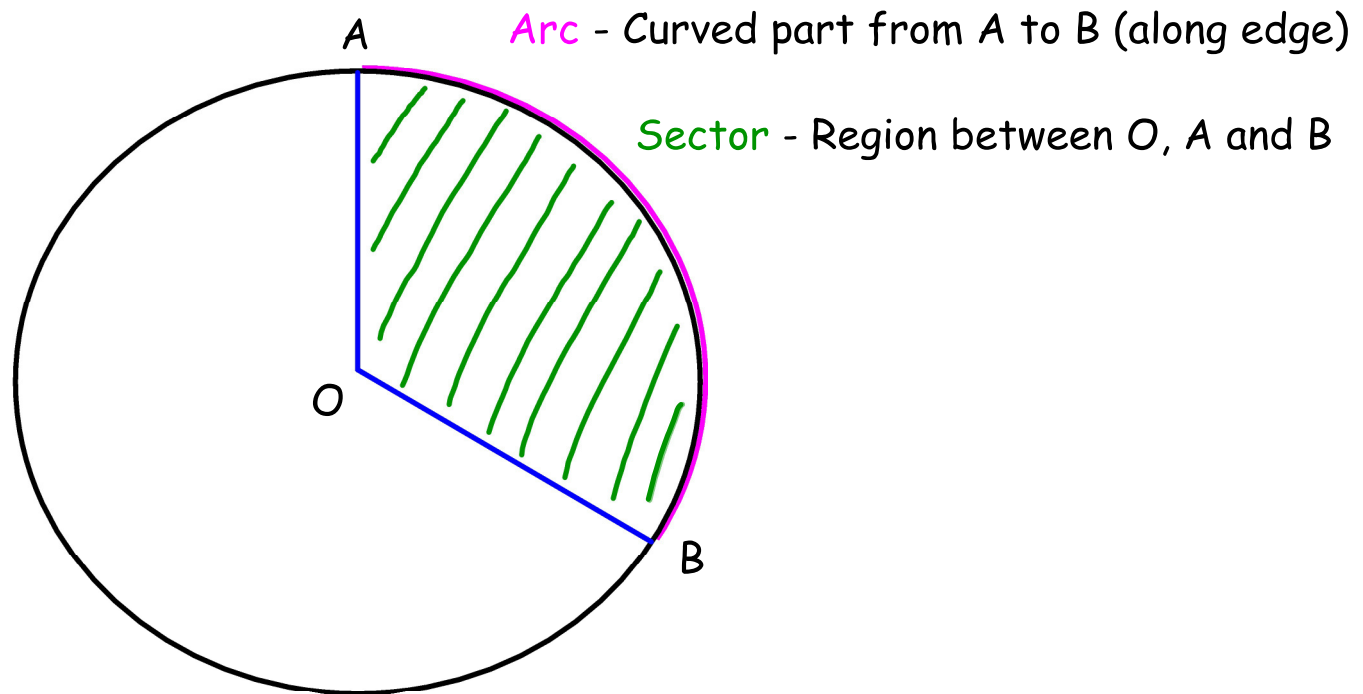
*Arc Length and Sector Area - Lesson 3***Sector Area - Calculator**LI

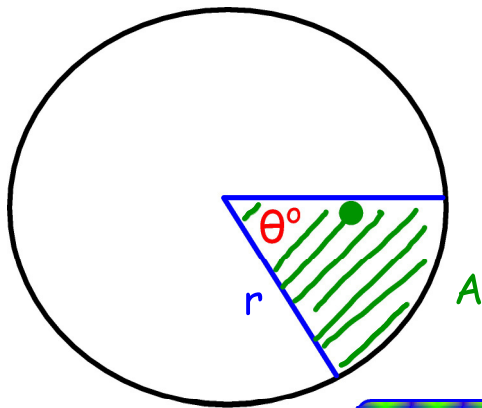
- Calculate the Sector Area of a circle with a calculator.

SC

- Use the Sector Area Formula.

Parts of a Circle





r = Radius

θ° = Sector Angle

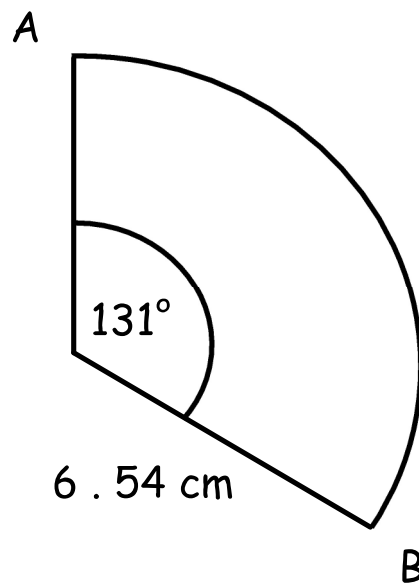
A = Sector Area

The Sector Area (aka Area of Sector)
is calculated using the formula :

$$A = \frac{\theta^\circ}{360^\circ} \times \pi r^2$$

Example 1

Calculate the area of sector AOB (to 2 d.p.).



$$\theta^{\circ} = 131^{\circ}, r = 6.54 \text{ cm}$$

$$A = \frac{\theta^{\circ}}{360^{\circ}} \times \pi r^2$$

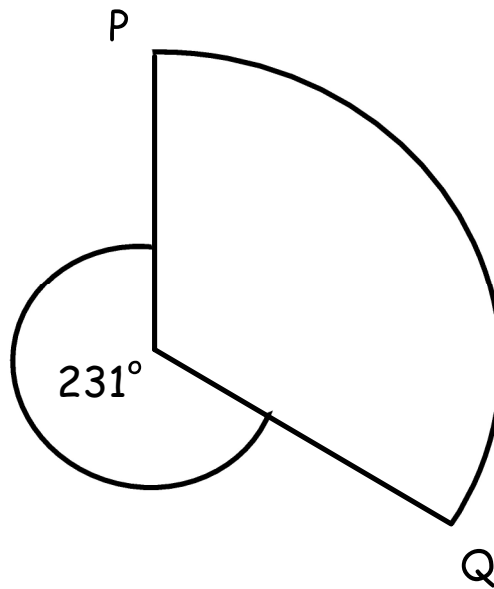
$$\Rightarrow A = \frac{131^{\circ}}{360^{\circ}} \times \pi \times 6.54^2$$

$$\Rightarrow A = 48.896 \dots$$

$$\therefore A = 48.90 \text{ cm}^2$$

Example 2

Calculate the area of sector PQR (to 3 sig. fig.),
made from a circle with diameter 76 mm.



$$\theta^{\circ} = 129^{\circ}, r = 38 \text{ mm}$$

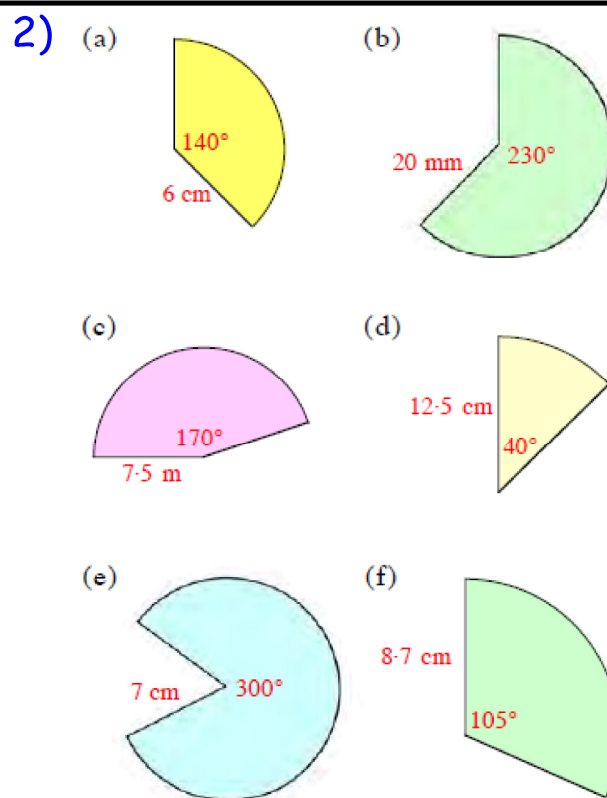
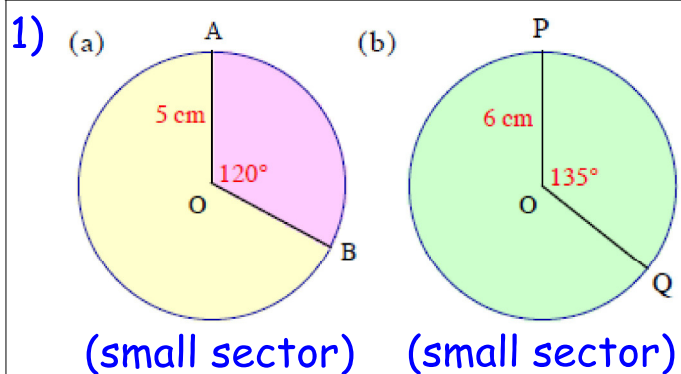
$$A = \frac{\theta^{\circ}}{360^{\circ}} \times \pi r^2$$

$$\Rightarrow A = \frac{129^{\circ}}{360^{\circ}} \times \pi \times 38^2$$

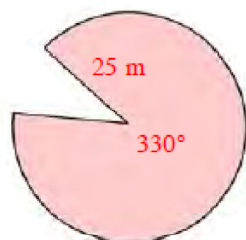
$$\Rightarrow A = 1625.56 \dots$$

$$\therefore A = 1630 \text{ mm}^2$$

Calculate the shaded areas (2 d.p.) :



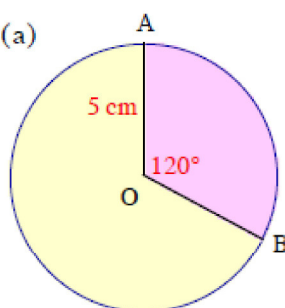
3)



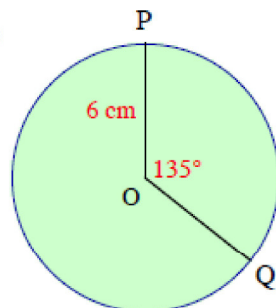
Answers

1)

(a)

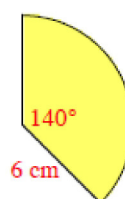
 26.18 cm^2

(b)

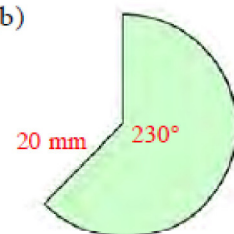
 42.41 cm^2

2)

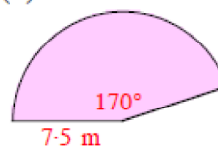
(a)

 43.98 cm^2

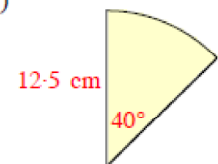
(b)

 802.85 mm^2

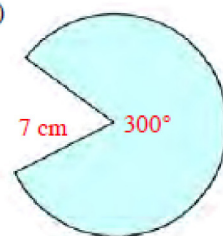
(c)

 83.45 m^2

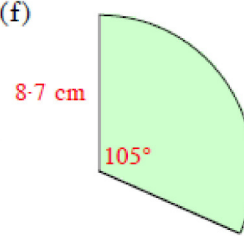
(d)

 54.54 cm^2

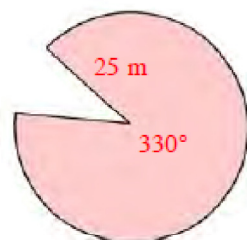
(e)

 128.28 cm^2

(f)

 69.35 cm^2

3)

 1799.87 m^2