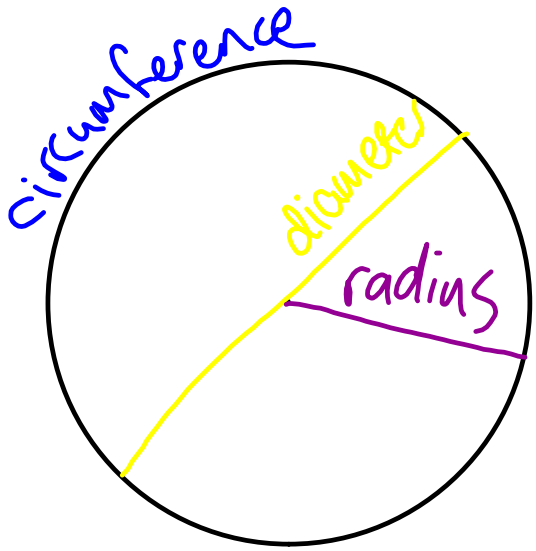
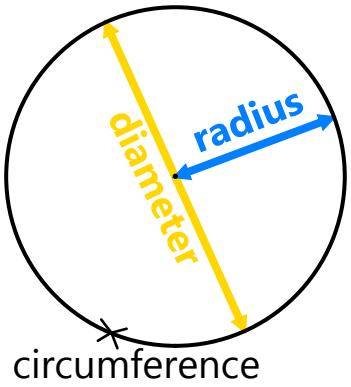
$C = \pi d$

Today's Learning:

To revise finding the area and circumference of a circle.

$A = \pi r^2$



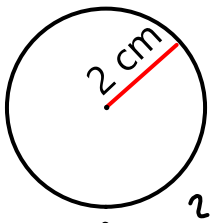


Circle

$\boxed{C = \pi d}$ $\boxed{A = \pi r^2}$

e.g. Find the area and circumference:

1)

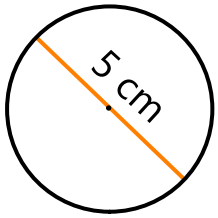


$r = 2$ cm
$d = 4$ cm

$C = \pi d$
$= \pi \times 4$
$= 12.6$ cm

$A = \pi r^2$
$= \pi \times 2^2$
$= 12.6$ cm^2

2)



$r = 2.5$ cm
$d = 5$ cm

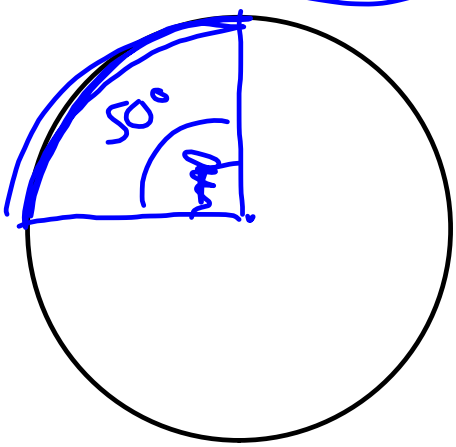
$C = \pi d$
$= \pi \times 5$
$= 15.7$ cm

$A = \pi r^2$
$= \pi \times 2.5^2$
$= 19.6$ cm^2

Today's Learning:

Calculating the length of an **arc** of a circle.

360°



$\frac{1}{4} \times \pi d$

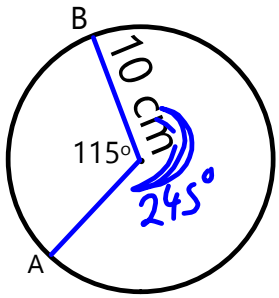
$\frac{50°}{360°} \times \pi d$

Arc Length

An arc length is a section of the circumference of a circle. Use the angle as a fraction of 360°.

$$\text{Arc length} = \frac{\text{angle}}{360°} \times \pi \times d$$

E.g. 1) Find the length of the minor arc AB.



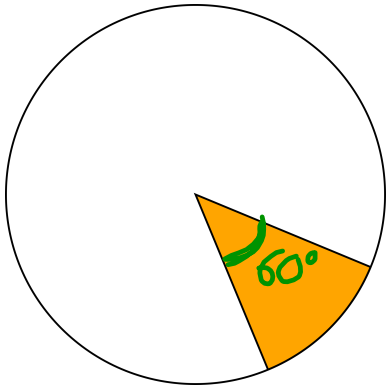
$\text{Arc} = \frac{115}{360} \times \pi \times 20$

$= 20.1\text{ cm}$

Today's Learning:

To calculate the area of sectors of circles.

$A = \frac{60}{360} \times \pi r^2$

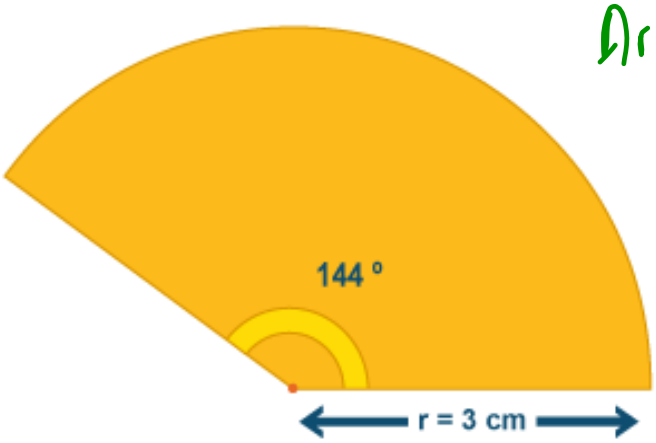


Sector Area

A sector is a fraction of a circle's area.

$$\text{Sector Area} = \frac{\text{angle}}{360^\circ} \times \pi \times r^2$$

e.g. 1) Find the area of the sector:



$\text{Area} = \frac{144}{360} \times \pi \times 3^2$

$= 11.3 \text{ cm}^2$

Today's Learning:

To use arc length and sector area when solving problems.

Find the arc length AB and the sector area:

Arc length

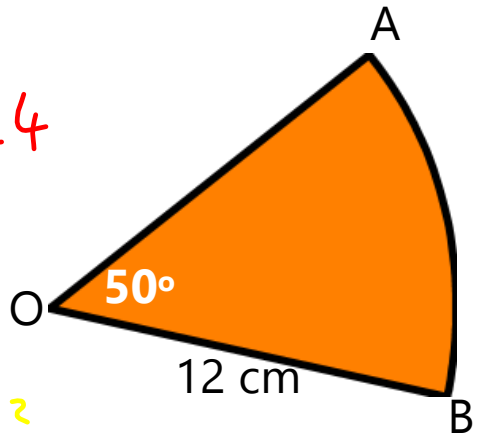
$= \frac{50}{360} \times \pi \times 24$

$= 10.5$ cm

Sector Area

$= \frac{50}{360} \times \pi \times 12^2$

$= 62.8$ cm^2



10.4719... 62.8318...