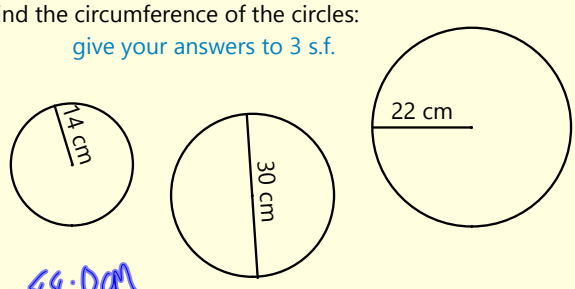
Starter $C = \pi d$

Find the circumference of the circles:

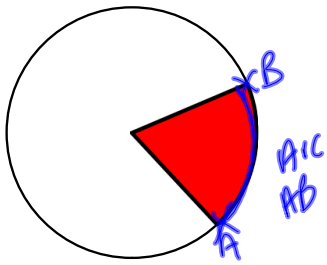
give your answers to 3 s.f.



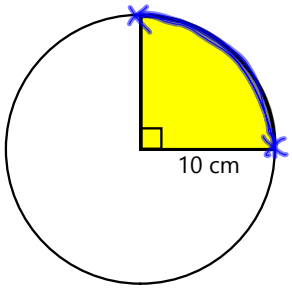
88.0cm

Today's Learning:

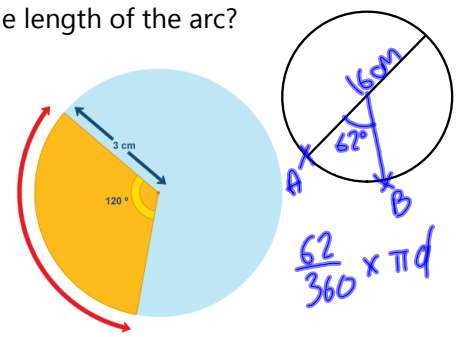
To be able to find the length of an arc of a circle.



What is the length of the arc?



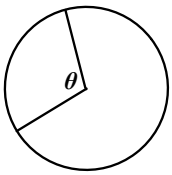
What is the length of the arc?



$\frac{62}{360} \times \pi d$

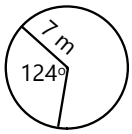
Arc Length 26/1/18

An arc is a section of the circumference of a circle.



$$\text{Arc Length} = \frac{\theta}{360} \times \pi \times d$$

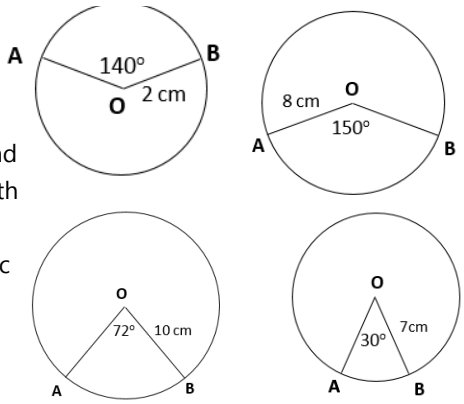
e.g. Find the length of the minor arc:



Arc length $= \frac{124}{360} \times \pi \times 14$

$= 15.1$ m (3 s.f

For each circle, find the length of the minor arc AB.

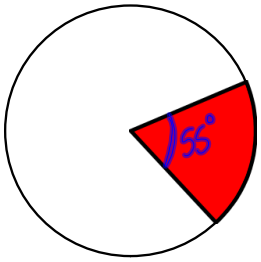


Today's Learning:

$A = \pi r^2$

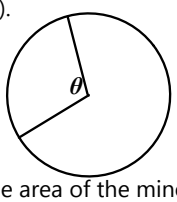
To find the area of a sector of a circle.

$\frac{55}{360} \times \pi r^2$



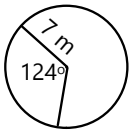
Sector Area

A sector is a fraction of the area of a circle (like a pie chart slice).



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

e.g. Find the area of the minor sector:



Sector Area $= \frac{124}{360} \times \pi \times 7^2$

$= 53.0\ m^2$ (3 s.f.)

Starter

1) Fully factorise the following:

a) $2m^2 + m - 3$ $(2m+3)(m-1)$

b) $b^2 - 9$ $(b-3)(b+3)$

c) $2h^2 + 14h + 20$ $2(h^2+7h+10)$

$(2h+10)(h+2)$

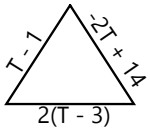
$= 2(h+5)(h+2)$

2) Using the formula, find the gradient of the straight line that joins:

a) (1, 3) and (7, 9) $\frac{6}{6} = 1$

b) (-2, 1) and (-5, -4) $\frac{-5}{-3} = \frac{5}{3}$

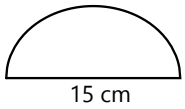
3) The lengths of the sides of this triangle are shown. If the triangle is equilateral, find T.



$T - 1 = 2(T-3)$

$T - 1 = 2T - 6$

Find the perimeter of the semi-circle, leaving your answer in terms of π.



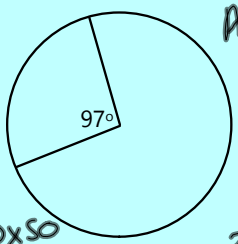
$C = 15\pi$

$P = \frac{15\pi}{2} + 15$

$= 15\left(\frac{\pi}{2} + 1\right)$

$= 7.5\pi + 15$ cm

If the length of the minor arc is 50m, what is the diameter of the circle (to 1 d.p.)?



$\text{Arc} = \frac{97}{360} \times \pi \times d$

$50 = \frac{97}{360} \times \pi \times d$

$\frac{50}{\pi} = \frac{97}{360} \times d$

$360 \times \frac{50}{\pi} = 97d$

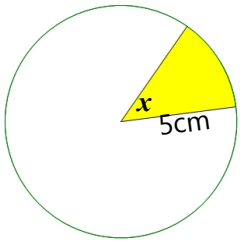
$360 \times \frac{50}{97\pi} = d$

$\frac{360 \times 50}{97\pi}$

59m

The area of the yellow segment is **12cm²**.

Find the angle x



Starter

1) Fully factorise the following:

a) $2c^2 - 8$ b) $j^2 - 5j - 24$ c) $2m^2 - 11m + 15$

$2(c^2-4)$
$2(c-2)(c+2)$

$(j-8)(j+3)$

$(2m-5)(m-3)$

2) Write in completed square form: $m^2 - 4m + 1$

$(m-2)^2 - 3$

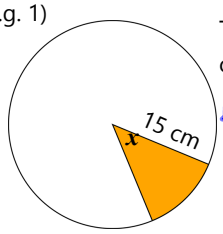
Today's Learning:

Working backwards to find angles, diameters and radii.

Working Backwards 30/1/18

Fill in what you know and rearrange the equation.

e.g. 1)



The length of the minor arc is 12 cm. Find the angle x.

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

$12 = \frac{x}{360} \times \pi \times 30$

$\frac{12}{30} = \frac{x}{360} \times \pi$

$\frac{12}{30\pi} = \frac{x}{360}$

$\frac{12 \times 360}{30\pi} = x$

$x = 45.8^\circ$ (3s.f.)