



S1

CfE Level 3

Working at Home Workbook

Circle 1

<b>Learning Intention. To be able to -</b>
Use a formula to find the circumference of a circle
Find perimeters of half/quarter circles
Find the diameter & radius of a circle given the circumference

## Use a formula to find the circumference of a circle

### Radius and Diameter

Complete the following table

	Radius	Diameter
1	12 cm	
2		20 cm
3		15 mm
4	8.2 mm	
5		16.4 mm
6	102 mm	
7		16 m
8	11.7 mm	
9	18 m	
10		1 cm

### Circumference of a circle

To find the circumference we use the formula

$C = \pi D$  where  $\pi$  is 3.14 and  $D$  is the diameter of the circle.

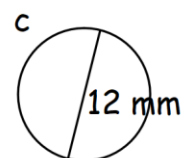
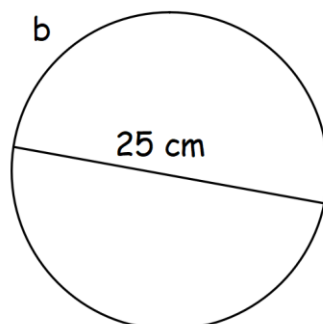
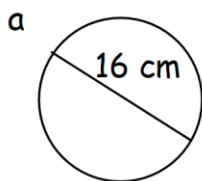
Example

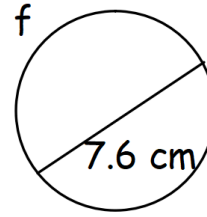
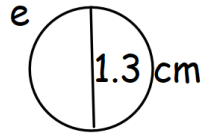
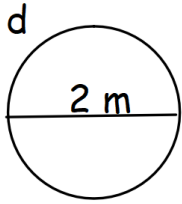
Calculate the circumference of a circle with diameter of 12 cm

$$\begin{aligned} C &= \pi D \\ &= 3.14 \times 12 \\ &= 37.68 \text{ cm} \end{aligned}$$

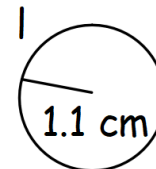
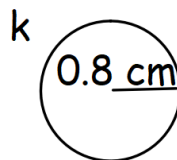
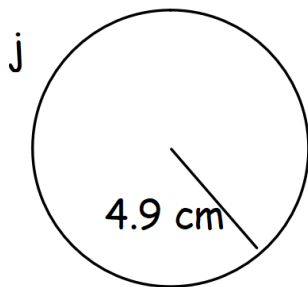
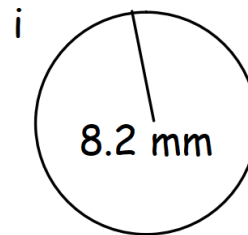
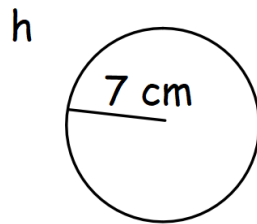
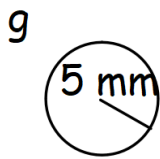
Exercise

Calculate the circumference of the following circles:





In the following questions you need to work out the diameter first before you calculate the circumference.



### Extension

Calculate the diameter of the circle with the circumference of 14.8 cm

We can find the diameter by dividing the circumference by  $\pi$

$$\text{So } D = 14.8 \div 3.14$$

$$= 4.71 \text{ cm}$$

Find the diameter of the circles (to 2 decimal places) that have a circumference of:

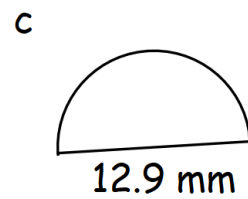
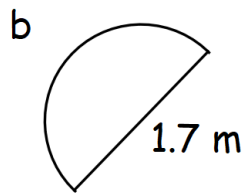
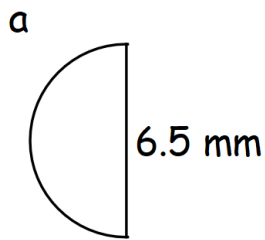
- a) 34 cm      b) 103 mm      c) 89.8 cm      d) 11.23 m      e) 31.4 mm

Find the radius of the circles (to 2 decimal places) that have circumference of:

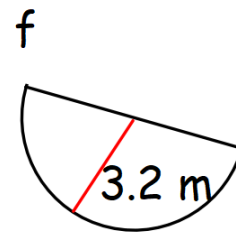
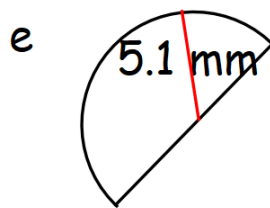
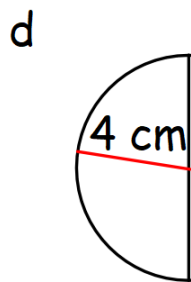
- a) 16 mm      b) 11 cm      c) 17.4 mm      d) 0.7 cm      e) 12.9 m

Find perimeters of half/quarter circles

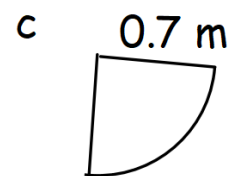
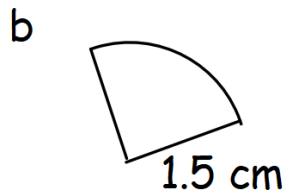
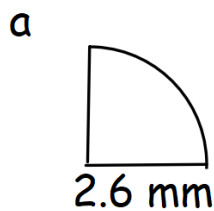
Calculate the perimeter of the following semi-circles with the given diameters:



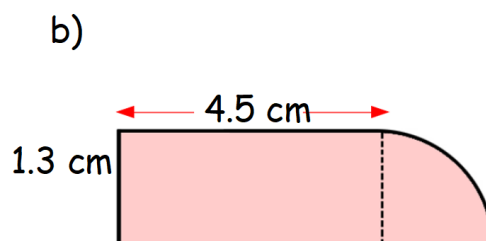
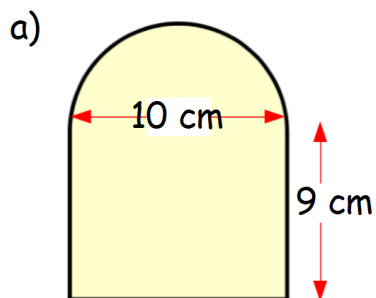
Calculate the perimeter of the following semi-circles with the given radii:



Calculate the perimeter of the following quarter circles:



Calculate the perimeter of the following composite shapes:



Find the diameter & radius of a circle given the circumference

Calculate the diameter of a circle with the circumference of 14.8 cm

We can find the diameter by dividing the circumference by  $\pi$

So  $D = 14.8 \div 3.14$   
 $= 4.71 \text{ cm}$

Find the diameter of the circles (to 2 decimal places) that have a circumference of:

- a) 34 cm      b) 103 mm      c) 89.8 cm      d) 11.23 m      e) 31.4 mm

Find the radius of the circles (to 2 decimal places) that have circumference of:

- b) 16 mm      b) 11 cm      c) 17.4 mm      d) 0.7 cm      e) 12.9 m