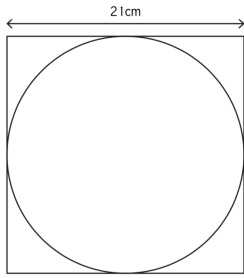
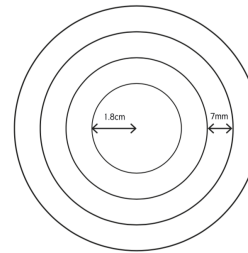


This design is made up of a circle inside a square.  
Calculate the radius of the circle.



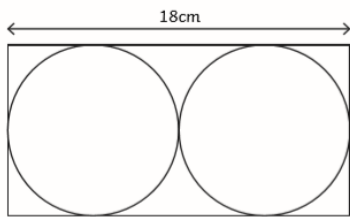
Radius = 10.5cm

Here are 4 concentric circles. The radius of the smallest circle is 1.8cm. The gap between the rest of the circles is always 7mm. Calculate the diameter of the largest circle.



Diameter = 3.9cm

This design is made up of 2 identical circles and a rectangle. Calculate the radius of the circles.



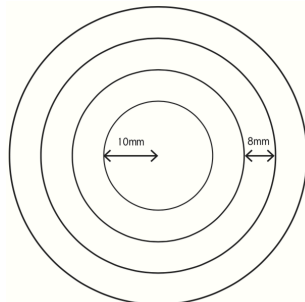
Radius = 4.5cm

The scooter travelled from the tree to the pond turning its wheels 25 times. The circumference of the bicycle wheel is 20cm. Calculate the distance from the tree to the pond.



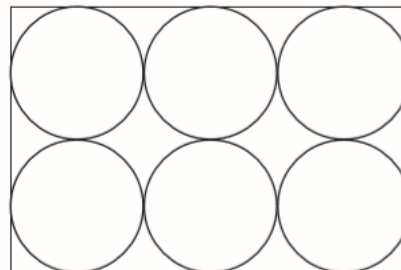
Distance = 5m

Calculate the diameter of the largest circle.



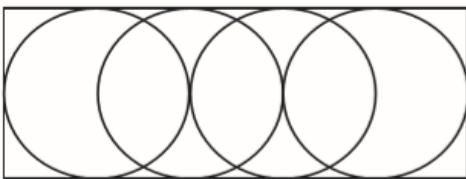
Diameter = 6.8cm

This design is made up of six circles, each with a radius of 14cm, inside a rectangle. Calculate the length and width of the rectangle.



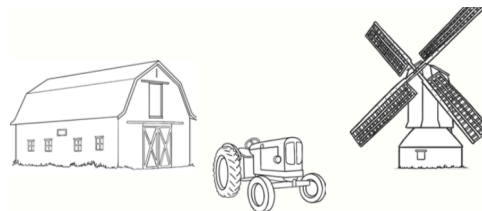
Length = 84cm Width = 56cm

This design is made up of four intersecting circles. Each circle has a diameter of 9cm. Calculate the length, width and area of the rectangle.



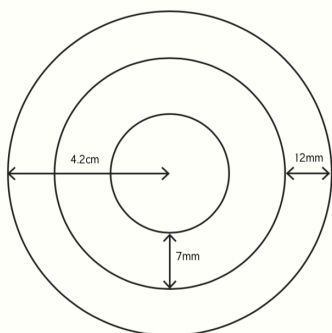
Width = 9cm. Length = 22.5cm. Area 202.5cm<sup>2</sup>

The tractor travelled from the barn to the windmill turning its wheels 75 times. The circumference of the big tractor wheel is 2.05m. Calculate the distance from the farm to the field.



Distance = 153.75m

Calculate the diameter of the smallest circle.



Diameter = 4.6cm

Alex says:



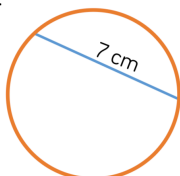
The bigger the radius of a circle, the bigger the diameter.

I agree with Alex because the diameter is always twice the length of the radius.

Do you agree? Explain your reasoning.

Spot the mistake!

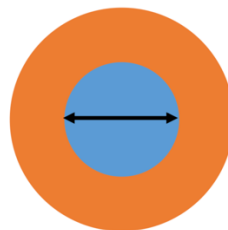
Tommy has measured and labelled the diameter of the circle below. He thinks that the radius of this circle will be 3.5 cm.



Is Tommy right? Explain why.

Tommy has measured the diameter inaccurately because the diameter always goes through the centre of the circle from one point on the circumference to another.

Here are 2 circles. Circle A is blue; Circle B is orange. The diameter of Circle A is  $\frac{3}{4}$  the diameter of Circle B.



If the diameter of Circle B is 12 cm, what is the diameter of Circle A?  
 If the diameter of Circle A is 12 cm, what is the radius of Circle B?  
 If the diameter of Circle B is 6 cm, what is the diameter of Circle A?  
 If the diameter of Circle A is 6 cm, what is the radius of Circle B?

- a) 9 cm
- b) 16 cm
- c) 4.5 cm
- d) 8 cm

A bar model may support children in working these out e.g.

