



# Circles 3.



Leave answers to an appropriate degree of accuracy.

A). Take  $\pi = 3.14$  in these questions.

Find the radii of these circles, if the **circumference** is:-

- 1). 31.4 cm    2). 18.84 m    3). 75.36 Km    4). 314 mm    5). 87.92 cm  
 6). 232.36 mm    7). 113.04 m    8). 12.56 cm    9). 791.28 Km    10). 558.92 mm  
 11). 40.192 Km    12). 45.844 cm    13). 88.548 m    14). 172.072 m    15). 101.736 Km

For the next set of questions use the calculator  $\pi$ .

- 16). 74 m    17). 15 cm    18). 124 mm    19). 65 Km    20). 46 m  
 21). 65 cm    22). 0.5 m    23). 34.2 mm    24). 2.7 m    25). 9.6 Km  
 26). 17.3 m    27). 146 mm    28). 95.3 cm    29). 1072 mm    30). 72 cm

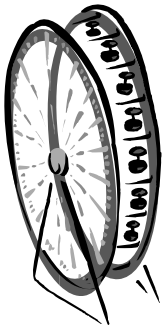
B). Take  $\pi = 3.14$  in these questions.

Find the radii of these circles, if the **area** is:-

- 1). 314 cm<sup>2</sup>    2). 78.5 m<sup>2</sup>    3). 706.5 Km<sup>2</sup>    4). 1256 mm<sup>2</sup>    5). 200.96 cm<sup>2</sup>  
 6). 50.24 mm<sup>2</sup>    7). 379.94 m<sup>2</sup>    8). 153.86 m<sup>2</sup>    9). 306.25 m<sup>2</sup>    10). 547.1136 mm<sup>2</sup>  
 11). 78.4 Km<sup>2</sup>    12). 97.2 cm<sup>2</sup>    13). 68.9 m<sup>2</sup>    14). 23 m<sup>2</sup>    15). 277.4504 Km<sup>2</sup>

For the next set of questions use the calculator  $\pi$ .

- 16). 94 m<sup>2</sup>    17). 55 cm<sup>2</sup>    18). 167 mm<sup>2</sup>    19). 68 Km<sup>2</sup>    20). 34 m<sup>2</sup>  
 21). 62.5 cm<sup>2</sup>    22). 0.3 m<sup>2</sup>    23). 54.2 mm<sup>2</sup>    24). 6.7 m<sup>2</sup>    25). 12.6 Km<sup>2</sup>  
 26). 23.3 m<sup>2</sup>    27). 106 mm<sup>2</sup>    28). 98.3 cm<sup>2</sup>    29). 2072 mm<sup>2</sup>    30). 42 cm<sup>2</sup>



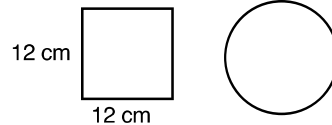
## Worded Questions

Use the calculator  $\pi$  in all these questions.

- Susan makes a trundle wheel. The radius of the wheel is 0.2 metres. She pushes the wheel across the playground. The wheel makes 30 complete revolutions. Find the distance across the playground.
- Paul goes for a short cycle ride. Each wheel on his bike has a radius of 27 cm. His distance counter tells him the wheel has rotated 650 times. Find how far he has travelled in metres.
- Calculate the area of a circle with radius 1.6 cm.
  - What is the radius of a circle with an area of 60 cm<sup>2</sup>.

4). The square and the circle have the same area.

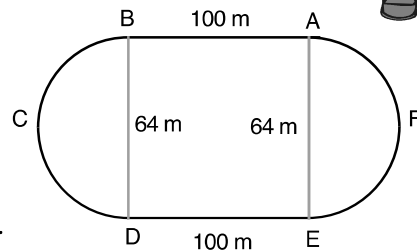
- Find the radius of the circle.
- What is the circumference of the circle ?



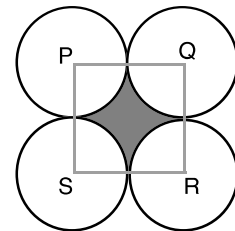
5). Jenny goes for a long cycle ride. Each wheel on her bike has a radius of 18 cm. Her distance counter tells her the wheel has rotated 5000 times. Find how far she has travelled in **Kilometres**.

6). The diagram shows a running track. BA and DE are parallel and straight. They are 100 m long. BCD and EFA are semicircular. They each have a diameter of length 64 m.

- Calculate the perimeter of the track.
- Calculate the total area enclosed inside the track.



- 7). a). A circle has a radius of 34 cm. Calculate its circumference.  
 b). The diagram shows four touching circles. Each circle has a radius of 34 cm. P, Q, R and S are centres of the circles and PQRS is a square.  
 i). What is the perimeter of the shaded region ?  
 ii). Calculate the area of the shaded region.



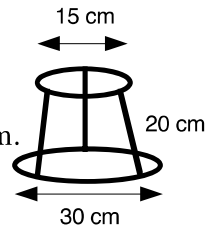
- 8). a). Calculate the area of a circle with a radius of 25 cm.  
 b). What is the radius of a circle with an area of  $450 \text{ cm}^2$  ?
- 9). Lynne goes for a cycle ride. Each wheel on her bike has a radius of 22 cm.  
 a). Find the circumference of her wheels.  
 b). Her distance counter tells her she has travelled 430 **metres**. How many times have the wheels fully rotated ?
- 10). a). Calculate the area of a circle with a radius of 2.8 m.  
 b). Many years ago the following rule was used to calculate the area of a circle.

Find  $\frac{8}{9}$  of the diameter. Square the result.



Use this rule to calculate the area of a circle with a radius of 1.3 m.

- 11). This is the wire frame of a lampshade. It is made up of two circles of wire and three straight lengths of wire.  
 a). The larger circle has a diameter of 30 cm. What is the circumference?  
 b). The straights are 20 cm each. The diameter of the smaller circle is 15 cm. Calculate the total length of wire needed to make the frame.



- 12). Metal discs that have a radius of 12 cm can be remoulded into square metal sheets of the same thickness.  
 a). I have 20 of the discs, what is the total area of metal that I have ?  
 b). This is to be made in to a square metal sheet. What size would this be ?
- 13). Billy does a sponsored bike ride. Each wheel on his bike has a radius of 30 cm.  
 a). Find the circumference of his wheels.  
 b). His distance counter tells him he has travelled 50 **Kilometres**. How many times have the wheels completely rotated ?

- 14). Find the **area** and **perimeter** of the shaded regions in the following shapes.

