Circle Work

Circumference
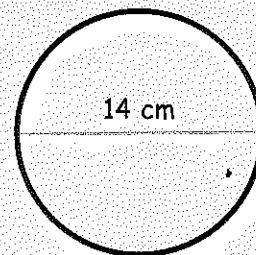
Remember that the perimeter or the **circumference** of a circle can be measured by the formula : –

$$C = \pi D$$

Circumference = 3·14 × Diameter

Example :- Calculate the circumference of this circle which has a diameter of 14 centimetres :-

=> $C = \pi D$

=> $C = 3.14 \times 14$

=> $C = 43.96$ cm

14 cm

Exercise 1

1. Calculate the circumference of a circle with diameter 7 cm.
   Copy and complete : -

   => $C = \pi D$

   => $C = 3.14 \times 7$

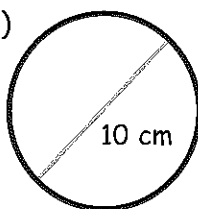   => $C = \ldots\ldots\ldots$ cm.

   7 cm
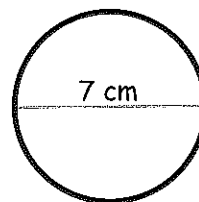
2. Calculate the circumference of each circle below : –
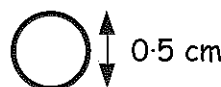   (You **must** set down 3 lines of working for each)

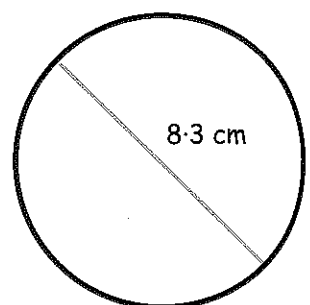   (a) 3 cm

   (b) 10 cm

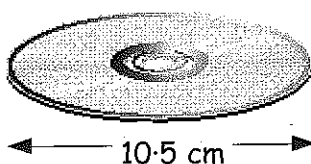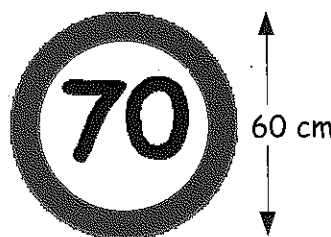   (c) 0·5 cm

   (d) 8·3 cm
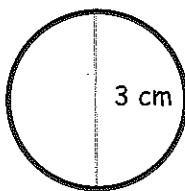
3. Find the circumference of each object below :-
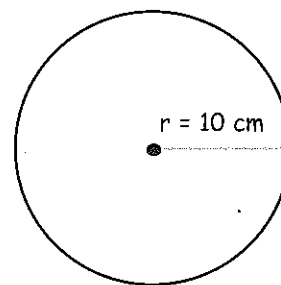
   (a) 10·5 cm

   (b) 60 cm

   (c) diameter = 4·8 cm

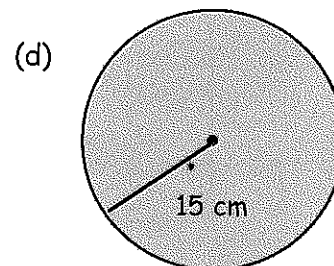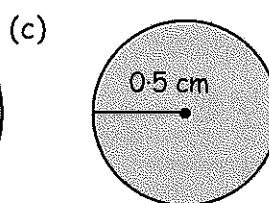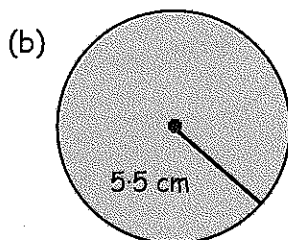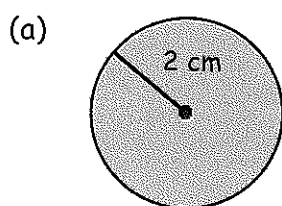> Remember if you are given a radius you need to **double** it to find the diameter.

4. Calculate the circumference of
   a circle with radius 10 cm.

   Copy and complete : –

   radius = 10 cm

   => diameter = 20 cm

   => $C = \pi D$

   => $C = 3\cdot14 \times 20$

   => $C = \ldots\ldots\ldots$ cm.

   r = 10 cm

5. Calculate the circumference of each circle below : –

   (a)   (b)   (c)   (d)

   2 cm   5·5 cm   0·5 cm   15 cm
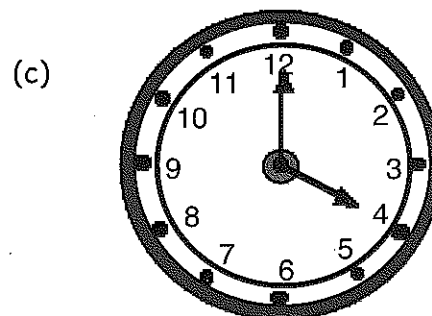
6. Find the perimeter of each object below :-

   (a)   (b)   (c)
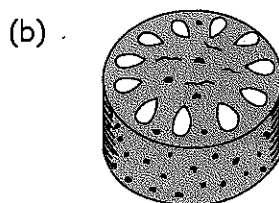
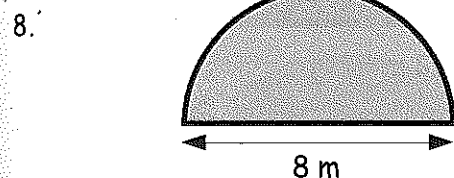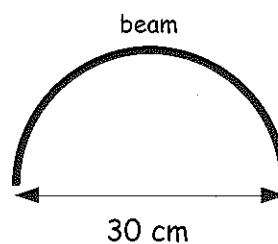   radius = 10 mm   radius = 16 cm   radius = 25·5 cm

7. A wooden beam, in the shape of a semi-circle,
   has diameter 30 centimetres.

   Calculate the length of the wooden beam.
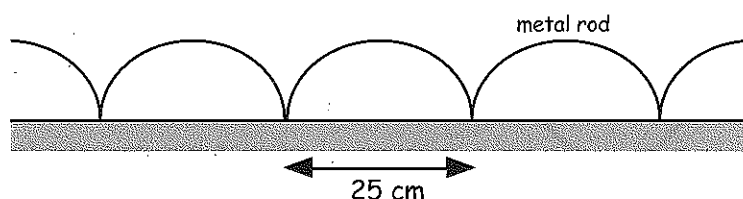
   beam

   30 cm

8.

   8 m

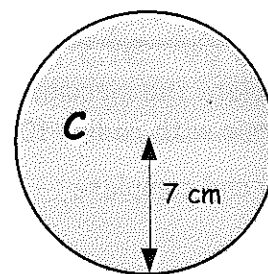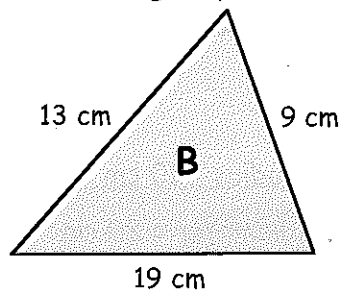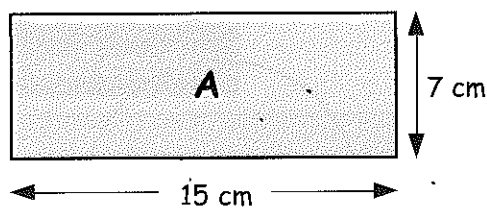   A semi-circular garden has a diameter of 8 metres.

   Calculate the perimeter of the garden.

9. A garden path has a fence made from strips of metal rod bent into semi-circles.
   Each semi-circle has a diameter of 25 centimetres.

   Find the length of metal
   rod needed to make the
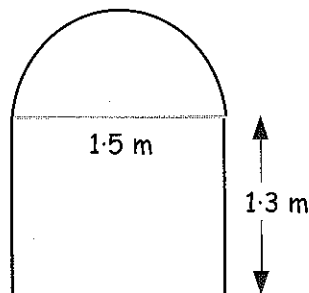   fence which has to be
   4 metres long.

   metal rod

   25 cm

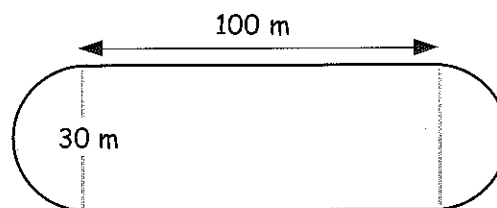10. Which of the three shapes below has the largest perimeter.
(Show all your working).

A — rectangle: 7 cm, 15 cm

B — triangle: 13 cm, 9 cm, 19 cm

C — circle: 7 cm

11. Calculate the perimeter of each shape below : –
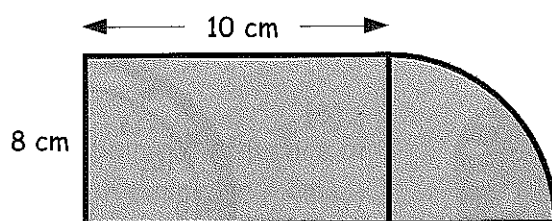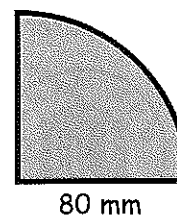
(a) 1·5 m, 1·3 m

(b) 100 m, 30 m

(c) 10 cm, 8 cm

(d) 80 mm
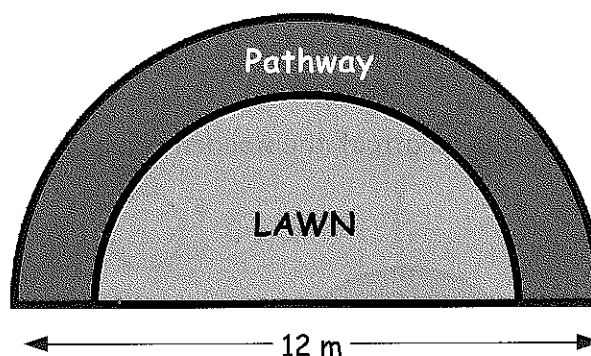
(Hint: length of a quarter circle....use C = πD then ÷ 4)

12. The semi-circular garden shown
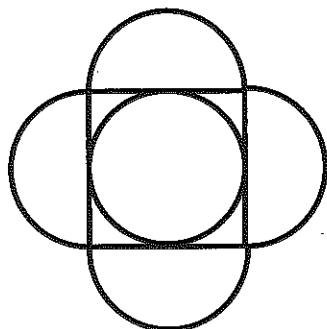has a diameter of 12 metres.

A semi-circular brick pathway
one metre wide partly surrounds
the grass lawn.

Find the perimeter of : –

(a) the grass lawn

(b) the brick path.

Pathway

LAWN

12 m

13. A florist uses this flower pattern as his logo.

The pattern is formed from a square, four
semi-circles and a circle.

The front of the shop has this design, made
from wrought iron, bolted onto it.

If the square has each side 90 cm, what length
of iron bar was needed to make the whole logo ?