

Practice Set 42

1. Complete the table below.

Sr. No.	Radius (r)	Diameter (d)	Circumference (c)
(i)	7 cm	.....	.....
(ii)	.....	28 cm	.....
(iii)	.....	.....	616 cm
(iv)	.....	.....	72.6 cm

Solⁿ:-

$$\textcircled{1} \quad r = 7 \text{ cm}$$

$$\text{Now, } d = 2r = 2 \times 7$$

$$\therefore d = 14 \text{ cm}$$

Also,

$$c = 2\pi r$$

$$= 2 \times \frac{22}{7} \times 7 \quad \dots \left(\pi = \frac{22}{7} \right)$$

$$= 2 \times 22$$

$$c = 44 \text{ cm}$$

$$\textcircled{2} \quad d = 28 \text{ cm}$$

$$\text{Now, } d = 2r$$

$$28 = 2r$$

$$r = \frac{28}{2}$$

$$\therefore r = 14 \text{ cm}$$

Also, $C = 2\pi r$

$$= 2 \times \frac{22}{7} \times 14$$

$$= 2 \times 22 \times 2$$

$$C = 88 \text{ cm}$$

③ $C = 616 \text{ cm}$

Now, $C = 2\pi r$

$$616 = 2 \times \frac{22}{7} \times r$$

$$r = \frac{616 \times 7}{2 \times 22}$$

$$r = 14 \times 7$$

$$r = 98 \text{ cm}$$

Also, $d = 2r$

$$= 2 \times 98$$

$$d = 196 \text{ cm}$$

④ $c = 72.6 \text{ cm}$

Now, $c = 2\pi r$

$$72.6 = 2 \times \frac{22}{7} \times r$$

$$r = \frac{\overset{3.3}{\cancel{72.6}} \times 7}{2 \times \cancel{22}_1}$$

$$r = \frac{3.3 \times \cancel{7}^{3.5}}{\cancel{2}_1}$$

$$\therefore r = 3.3 \times 3.5$$

$$\therefore r = 11.55 \text{ cm}$$

Also, $d = 2r$

$$= 2 \times 11.55$$

$$\therefore d = 23.10 \text{ cm}$$

Sr. No.	Radius (r)	Diameter (d)	Circumference (c)
(i)	7 cm	14 cm	44 cm
(ii)	14 cm	28 cm	88 cm
(iii)	98 cm	196 cm	616 cm
(iv)	11.55 cm	23.10 cm	72.6 cm

2. If the circumference of a circle is 176 cm, find its radius.

Solⁿ:- Here, $C = 176 \text{ cm}$

$$r = ?$$

We know,

$$C = 2\pi r$$

$$176 = 2 \times \frac{22}{7} \times r$$

$$\therefore r = \frac{176 \times 7}{2 \times 22}$$

$$\therefore r = 4 \times 7$$

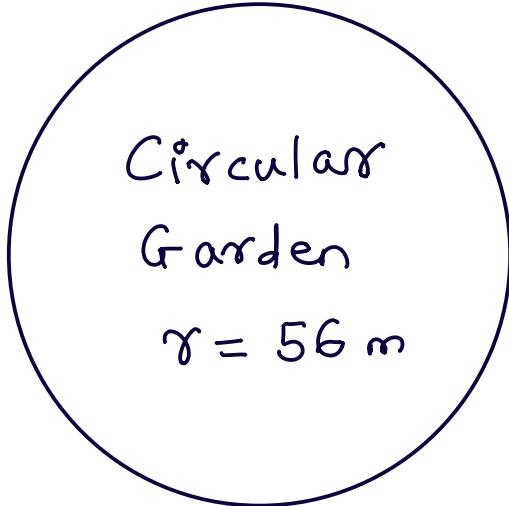
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$$r = 28 \text{ cm}$$

3. The radius of a circular garden is 56 m. What would it cost to put a 4-round fence around this garden at a rate of 40 rupees per metre ?

Solⁿ:-

Here,



$$r = 56 \text{ m}$$

$$\begin{aligned} \text{rate of fencing} \\ = ₹ 40/\text{metre.} \end{aligned}$$

Now, circumference of the circular garden, $C = 2\pi r$

$$= 2 \times \frac{22}{7} \times 56$$

$$= 2 \times 22 \times 8$$

$$= 44 \times 8$$

$$C = 352 \text{ m}$$

Now, we have to put a 4-round fence to the garden,

$$\begin{aligned}
\therefore \text{Total length of the fence} \\
&= 4 \times c \\
&= 4 \times 352 \\
&= 1408 \text{ metre.}
\end{aligned}$$

$$\begin{aligned}
\therefore \text{The cost of 4-round fence} \\
&= 1408 \times 40 \\
&= \underline{56,320 \text{ rupees.}}
\end{aligned}$$

4. The wheel of a bullock cart has a diameter of 1.4m. How many rotations will the wheel complete as the cart travels 1.1 km ?

Solⁿ:- For wheel of bullock cart,

$$d = 1.4 \text{ m}$$

$$\therefore r = \frac{d}{2} = \frac{1.4}{2} = 0.7 \text{ m}$$

Now, circumference of the wheel
of bullock cart,

$$\begin{aligned}
C &= 2\pi r \\
&= 2 \times \frac{22}{7} \times 0.7
\end{aligned}$$

$$= 2 \times 22 \times 0.1$$

$$= 44 \times 0.1$$

$$C = 4.4 \text{ m}$$

Now, the bullock cart travels 1.1 km.

\therefore Rotations made by the wheel of the bullock cart,

$$= \frac{\text{Distance travelled by Bullock Cart}}{\text{Circumference of the wheel of the bullock cart}}$$

$$= \frac{1.1 \text{ km}}{4.4 \text{ m}}$$

$$= \frac{1.1 \times 1000}{4.4}$$

$$= \frac{1100}{4.4}$$

$$= \frac{11000}{44}$$

$$= 250 \text{ rotations}$$
