

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q7 Answer:

It is given that the diameter of the wheel is 90 cm.

- \therefore Radius of the circular wheel, $r = \frac{90}{2} = 45$ cm.
- \therefore Perimeter of the wheel $= 2 \times \pi \times r = 2 \times \frac{22}{7} \times 45 = 282.857$ cm

It means the wheel travels 282.857 cm in a revolution.

Now, it makes 315 revolutions per minute.

- \therefore Distance travelled by the wheel in one minute = $315 \times 282.857 = 89100$ cm
- \therefore Speed = 89100 cm per minute = $\frac{89100 \text{ cm}}{1 \text{ minute}}$

Now, we need to convert it into kilometers per hour.

$$\therefore \frac{89100 \text{ cm}}{1 \text{ minute}} = \frac{89100 \times \frac{1}{1000000} \text{ kilometer}}{\frac{1}{60} \text{ hour}}$$

- $= \frac{89100}{100000} \times \frac{60}{1} \times \frac{\text{kilometer}}{\text{hour}}$
- = 53.46 kilometers per hour

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q8 Answer:

Given:

Area of the rhombus = 240 cm

Length of one of its diagonals $=16~\mathrm{cm}$

We know that if the diagonals of a rhombus are d_1 and d_2 , then the area of the rhombus is given by:

$$Area = \frac{1}{2} \left(\mathbf{d}_1 \times \mathbf{d}_2 \right)$$

Putting the given values:

$$240 = \frac{1}{2} \left(16 \times \mathbf{d}_2 \right)$$

 $240\times 2=16\times d_2$

This can be written as follows:

$$16 \times \mathbf{d}_2 = 480$$

$$d_2 = \frac{480}{16}$$

$$d_2 = 30$$
 cm

Thus, the length of the other diagonal of the rhombus is 30 cm.

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q9

Answer:

Given:

Lengths of the diagonals of a rhombus are 7.5 cm and 12 cm.

Now, we know: Area =
$$\frac{1}{2} \left(d_1 \times d_2 \right)$$

$$\therefore$$
 Area of rhombus = $\frac{1}{2} \left(7.5 \times 12\right) = 45 \text{ cm}^2$

*********** END ********