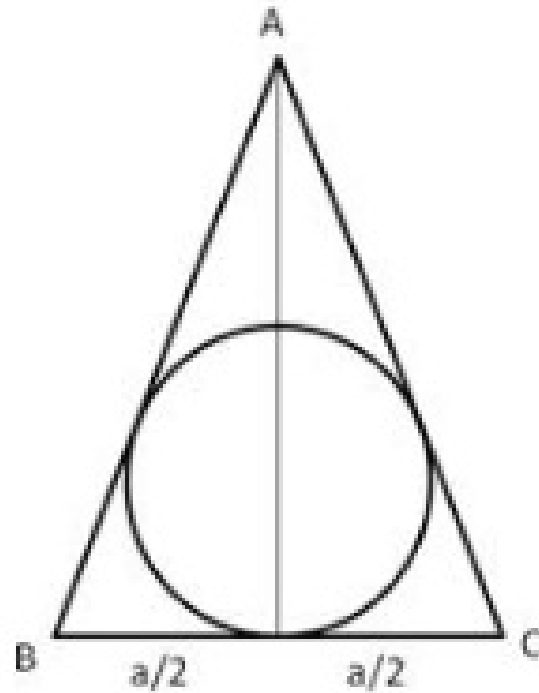




Question 23:

Let the radius of circle be r cm



$$\text{Then, } \pi r^2 = 154$$

$$\Rightarrow r^2 = \left(154 \times \frac{7}{22} \right)$$

$$\Rightarrow r = 7 \text{ cm}$$

Let each side of the triangle be a cm

And height be h cm

$$\text{Then, } r = \frac{h}{3}$$

$$\Rightarrow h = 3r = 21 \text{ cm}$$

$$h = \sqrt{a^2 - \frac{a^2}{4}} = \frac{\sqrt{3a^2}}{2} = \frac{\sqrt{3}a}{2} = 21$$

$$a = \frac{42}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = 14\sqrt{3} \text{ cm}$$

$$\begin{aligned} \text{Perimeter} &= 3a = (3 \times 14 \times \sqrt{3}) = (42 \times 1.73) \text{ cm} \\ &= 72.66 \text{ cm} \end{aligned}$$

Question 24:

Radius of the wheel = 42 cm

$$\text{Circumference of wheel} = 2\pi r = \left(2 \times \frac{22}{7} \times 42\right) \text{ cm} = 264 \text{ cm}$$

Distance travelled = 19.8 km = 1980000 cm

$$\text{Number of revolutions} = \left(\frac{1980000}{264}\right) = 7500$$

Question 25:

Radius of wheel = 2.1 m

$$\text{Circumference of wheel} = (2\pi r) \text{ m} = \left(2 \times \frac{22}{7} \times 2.1\right) \text{ m} = 13.2 \text{ m}$$

Distance covered in one revolution = 13.2 m

Distance covered in 75 revolutions = (13.2 × 75) m = 990 m

$$= \frac{990}{1000} \text{ km}$$

$$\text{Distance a covered in 1 minute} = \frac{99}{100} \text{ km}$$

$$\text{Distance covered in 1 hour} = \left(\frac{99}{100} \times 60\right) \text{ km} = 59.4 \text{ km}$$

Question 26:

Distance covered by the wheel in 1 revolution

$$= \left(\frac{4.95 \times 1000 \times 100}{2500}\right) \text{ cm} = 198 \text{ cm}$$

The circumference of the wheel = 198 cm

Let the diameter of the wheel be d cm

$$\text{Then, } \pi d = 198 \Rightarrow \frac{22}{7} \times d = 198$$

$$\Rightarrow d = \frac{198 \times 7}{22} = 63 \text{ cm}$$

Hence diameter of the wheel is 63 cm

Question 27:

$$\text{Radius of the wheel} = r = \frac{60}{2} = 30 \text{ cm}$$

$$\text{Circumference of the wheel} = 2\pi r = \left(2 \times \frac{22}{7} \times 30\right) \text{ cm}$$

$$= \frac{1320}{7} \text{ cm}$$

Distance covered in 140 revolution

$$\begin{aligned} &= \left(\frac{1320}{7} \times 140\right) \text{ cm} = (1320 \times 20) \text{ cm} \\ &= 26400 \text{ cm} = \frac{26400}{100} \text{ m} = 264 \text{ m} = \frac{264}{1000} \text{ km} \end{aligned}$$

$$\text{Distance covered in one hour} = \left(\frac{264}{1000} \times 60\right) \text{ km} = 15.84 \text{ km}$$

***** END *****