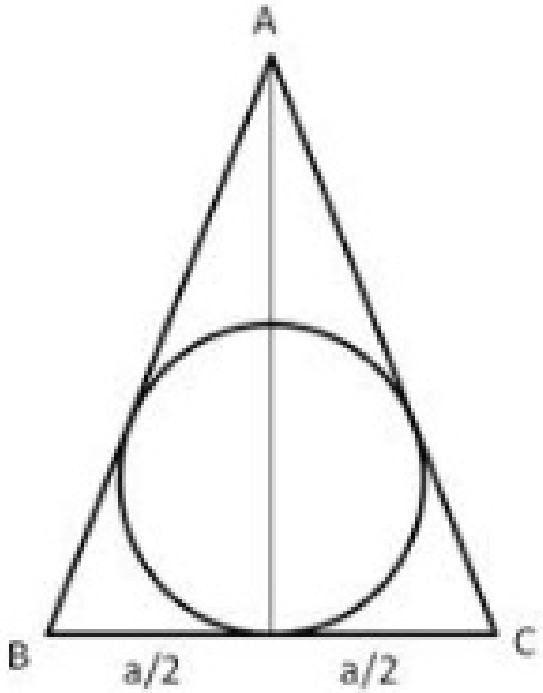
Question 23:
Let the radius of circle be r cm



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

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

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

Let each side of the triangle be a cm
And height be h cm

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

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

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

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

$$\text{Perimeter} = 3a = \left(3 \times 14 \times \sqrt{3}\right) = (42 \times 1.73)\text{cm}$$

$$= 72.66 \text{ cm}$$

Question 24:

Radius of the wheel = 42 cm

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

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

Question 25:

Radius of wheel = 2.1 m

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

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

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

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

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

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

Hence diameter of the wheel is 63 cm

Question 27:

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

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

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

Distance covered in 140 revolution

$$= \left(\frac{1320}{7} \times 140\right) \text{cm} = (1320 \times 20) \text{cm}$$

$$= 26400 \text{ cm} = \frac{26400}{100} \text{m} = 264 \text{m} = \frac{264}{1000} \text{km}$$

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

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