



Surface Area and volume of A Right Circular cylinder Ex 19.2 Q28

Answer :

Given data is as follows:

Area of cross-section of the pipe = 5 cm^2

Speed of water = 30 cm/sec

We have to find the volume of water that flows through the pipe in 1 minute.

Volume of water that flows through the pipe in one second = $\pi r^2 h$

Here, πr^2 is nothing but the cross section of the pipe and h is 30 cm .

Therefore, we have,

Volume of water that flows through the pipe in one second = 5×30
 $= 150 \text{ cm}^3$

Volume of water that flows through the pipe in one minute = 150×60
 $= 9000 \text{ cm}^3$

We know that $1000 \text{ cm}^3 = 1 \text{ liter}$. Therefore,

Volume of water that flows through the pipe in one minute = 9 liters

Hence, the volume of water that flows through the given pipe in 1 minute is 9 liters.

Surface Area and volume of A Right Circular cylinder Ex 19.2 Q29

Answer :

Given data is as follows:

$$h + r = 37 \text{ cm}$$

$$\text{Total surface area of the cylinder} = 1628 \text{ cm}^2$$

We have to find the volume of the cylinder.

It is given that,

$$\text{Total surface area} = 1628 \text{ cm}^2$$

That is,

$$2\pi rh + 2\pi r^2 = 1628$$

$$2\pi r(h + r) = 1628$$

But it is already given in the problem that,

$$h + r = 37 \text{ cm}$$

Therefore,

$$2\pi r \times 37 = 1628$$

$$2 \times \frac{22}{7} \times r \times 37 = 1628$$

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

Since $h + r = 37 \text{ cm}$

We have,

$$h + 7 = 37 \text{ cm}$$

$$h = 30 \text{ cm}$$

Now that we know both height and radius of the cylinder, we can easily find the volume.

$$\text{Volume} = \pi r^2 h$$

$$\text{Volume} = \frac{22}{7} \times 7 \times 7 \times 30$$

$$\text{Volume} = 4320 \text{ cm}^3$$

Hence, the volume of the given cylinder is 4320 cm^3 .

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