

Surface Area and volume of A Right Circular cylinder Ex 19.2 Q15 Answer:

Given data is as follows:

Curved Surface Area = 267 m²

 $Volume = 924 \text{ m}^3$

We have to find the height and diameter of this cylinder.

We know that,

Volume = $\pi r^2 h$

$$\pi r^2 h = 924$$

$$(\pi rh)r = 924 \dots (1)$$

Also, it is given that

Curved Surface Area = 267

That is.

$$2\pi rh = 264$$

$$\pi rh = \frac{264}{2}$$
(2)

Now let us replace the value of πrh in equation (1). We get,

$$\left(\frac{264}{2}\right) \times r = 924$$

$$r = 7$$

Therefore, diameter = 7×2

= 14 cm

Substitute the value of r in equation (2). We get,

$$\frac{22}{7} \times 7 \times h = \frac{264}{2}$$

$$h = 6$$

Therefore, the answer to this question is,

Diameter of the cylinder = 14 m

Height of the cylinder = 6 m

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Answer:

Given data is as follows:

$$\frac{h_1}{h_2} = \frac{1}{2}$$

Volume of cylinder₁ = Volume of cylinder₂

We have to find the ratio of their radii

Since the volumes of the two cylinders are equal,

 $\frac{\text{Volume of cylinder}_1}{\text{Volume of cylinder}_2} = 1$

$$\frac{\pi r_1^2 h_1}{\pi r_2^2 h_2} = 1$$

$$\left(\frac{r_1}{r_2}\right)^2 \left(\frac{h_1}{h_2}\right) = 1$$

But it is given that,

$$\frac{h_1}{h_2} = \frac{1}{2}$$

Therefore,

$$\left(\frac{r_1}{r_2}\right)^2 \times \frac{1}{2} = 1$$

$$\left(\frac{r_1}{r_2}\right)^2 = 2$$

$$\left(\frac{r_1}{r_2}\right)^2 = \frac{2}{1}$$

$$\frac{r_1}{r_2} = \frac{\sqrt{2}}{1}$$

Therefore, the ratio of the radii of the two cylinders is $\sqrt{2}$:1

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