



Surface Area and volume of A Right Circular cylinder Ex 19.2 Q1

Answer :

Given data is as follows:

(i) For tin can with rectangular base:

Length = 5 cm

Width = 4 cm

Height = 10 cm

(ii) For plastic cylinder with circular base

Diameter = 7 cm

Height = 10 cm

We have to find out which container has greater capacity and also the difference in their capacities.

(i) Volume of tin can = $\text{length} \times \text{breadth} \times \text{height}$

$$= 5 \times 4 \times 10$$

$$= 200 \text{ cm}^3$$

(ii) Volume of cylinder = $\pi r^2 h$

Diameter is given as 7cm. Therefore, $r = \frac{7}{2}$

$$\text{Volume of cylinder} = \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2} \times 10$$

$$= 385 \text{ cm}^3$$

From the above it can be concluded that plastic cylinder has greater capacity.

$$\text{Difference in their capacities} = 385 - 200 = 185 \text{ cm}^3$$

Surface Area and volume of A Right Circular cylinder Ex 19.2 Q2

Answer :

Given data is as follows:

$$r = 20 \text{ cm}$$

$$h = 10 \text{ m}$$

Number of pillars = 14

We have to find the total amount of concrete present in all 14 pillars.

Radius of the pillar is given in centimeters, so let us convert it to meters.

$$r = 20 \text{ cm} = .2 \text{ m}$$

Let us first find the amount of concrete present in one pillar, which is nothing but the volume of the pillar.

$$\text{volume of 1 pillar} = \pi r^2 h$$

$$= \pi \times .2 \times .2 \times 10$$

$$\text{volume of 14 pillars} = 14 \times \pi \times .20 \times .20 \times 10$$

$$= 14 \times \frac{22}{7} \times .20 \times .20 \times 10$$

$$\boxed{\text{volume of 14 pillars} = 17.6 \text{ m}^3}$$

Therefore, total amount of concrete mixture in 14 pillars is 17.6 m^3

Surface Area and volume of A Right Circular cylinder Ex 19.2 Q3

Answer :

Given data is as follows:

Inner diameter = 24cm

Outer diameter = 28cm

$h = 35\text{cm}$

Mass of 1 cm^3 of wood = 0.6gm

We have to find the mass of the pipe.

In this problem the inner and outer diameter of the pipe is given. Let us first find out the radius.

Inner radius (r) = 12cm

Outer radius (R) = 14cm

Volume of the hollow pipe = $\pi(R^2 - r^2)h$

$$= \frac{22}{7} \times (24^2 - 12^2) \times 35$$

$$= \frac{22}{7} \times 26 \times 2 \times 35$$

$$= 5720$$

It is given that,

1 cm^3 of wood weighs 0.6gm

Therefore, 572 cm^3 of wood will weigh $5720 \times .6 = 3432\text{gm}$

$= 3.432\text{kg}$

Therefore, weight of the wooden pipe = 3.432kg

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