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Surface Area and volume of A Right Circular cylinder Ex 19.1 Q1

Answer :

In the problem it is given that the Curved Surface Area of the cylinder is $4.4m^2$.

We know that,

Curved Surface Area of a cylinder $= 2\pi rh$

Where, $r =$ radius of the cylinder and $h =$ height of the cylinder

In the given problem, $r = 0.7m$ and h is to be found out.

Let us substitute all the given values in the formula for Curved Surface Area of the cylinder.

We have,

$4.4 = 2 \times \pi \times 0.7 \times h$

For simplifying the, this can be written as,

$\dfrac{44}{10} = 2 \times \dfrac{22}{7} \times \dfrac{7}{10} \times h$

Now, clearly $h = 1\,m$

Therefore, the height of the cylinder is 1 meter.

Surface Area and volume of A Right Circular cylinder Ex 19.1 Q2

Answer :

The following data is given in the problem:

$h = 28$ m

Diameter = 5 cm

We are asked to find the Total radiating surface, which is nothing but the Total Surface Area of the cylinder.

The height of the cylinder is in meters, so let us first convert it into centimeters.

$h = 2800$ cm

Also, the diameter of the cylinder is given, but we want the radius.

$r = \dfrac{diameter}{2} = \dfrac{5}{2}$

The formula for finding out the Total Surface Area is:

Total Surface Area $= 2\pi rh + 2\pi r^2$

Substituting the above values in this equation, we have

Total Surface Area $= 2 \times \dfrac{22}{7} \times \dfrac{5}{2} \times 2800 + 2 \times \dfrac{22}{7} \times \dfrac{5}{2} \times \dfrac{5}{2}$

Total Surface Area $= 44000 + 39.28$

Total Surface Area $= 44039.28 cm^2$

Therefore, the answer to this problem is $= 44039.28 cm^2$

Surface Area and volume of A Right Circular cylinder Ex 19.1 Q3

Answer :

The data given in the problem is as follows:

Diameter of the cylinder = 50cm

Height = 3.5m

Painting charges = Rs.12.50 per m²

We have to find the total cost of painting the pillar

To find the cost of painting the pillar, we should first find the Curved Surface Area of the pillar using the given data.

Curved Surface Area $= 2\pi rh$

$r = \dfrac{diameter}{2} = \dfrac{50}{2} = 25cm$

Since the painting charges are given in terms of m^2, we shall convert the radius from centimeters to meters.

$r = 0.25m$

Substituting the values in the formula for Curved Surface Area, we have

Curved Surface Area $= 2 \times \dfrac{22}{7} \times .25 \times 3.5$

Curved Surface Area $= 5.5 \ m^2$

It is given that, for 1 m² the cost of painting is Rs.12.50

Therefore,

Total cost of painting the pillar $= 5.5 \times 12.50$

$= 68.75$

Therefore, the answer to this questions is, Rs.68.75

Surface Area and volume of A Right Circular cylinder Ex 19.1 Q4

Answer :

The data given in the problem is as follows:

$h = 1 \ m$

Diameter = 140 cm

We are asked to find the area of the sheet in square meters required to make this cylinder.

Since it is a closed cylinder, the area of the sheet required to make this will be equal to the Total surface area of the cylinder.

Total surface area $= 2\pi rh + 2\pi r^2$

$r = \dfrac{diameter}{2} = \dfrac{140}{2} = 70cm$

Since area is asked in square meters, let us convert the radius from centimeters to meters.

$r = 0.7m$

Substituting the values in the formula for the Total Surface Area of a cylinder, we have

Total Surface Area $= 2 \times \dfrac{22}{7} \times 0.7 \times 1 + 2 \times \dfrac{22}{7} \times 0.7 \times 0.7$

Total Surface Area $= 7.48$

Therefore, the area of sheet required to make this cylinder is 7.48 square meters.

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