Surface Area and volume of A Right Circular cylinder Ex 19.2 Q13

Answer :

Data given is as follows:

$\frac{r}{h}=\frac{2}{3}$

Volume = 1617 cm^3

We have to find the Total surface area

From the given data, we have

$\frac{r}{h}=\frac{2}{3}$

Therefore, $h=\frac{3}{2}r$

Also, we know that

Volume = $\pi r^2 h = 1617$

$\pi r^2 h = 1617$

$\times\frac{22}{7}\times r\times r\frac{3}{2}\times r = 1617$

$r^3 = 343$

$r = 7$ cm

$h=\frac{3}{2}\times 7$

$h=\frac{21}{2}$ cm

Therefore, total surface area is

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

$$\Rightarrow TSA = 2\times\frac{22}{7}\times 7\left(7+\frac{21}{2}\right)$$

$$\Rightarrow TSA = \boxed{770\ cm^2}$$

Surface Area and volume of A Right Circular cylinder Ex 19.2 Q14

Answer :

Given data is as follows:

Dimensions of the rectangular sheet = 44 cm × 20 cm

We have to find the volume of the cylinder that is made out of this rectangular strip.

Since the rectangular strip is rolled along its length, we have,

Circumference of the cylinder = length of the rectangular strip

$= 44\text{cm}$

We know that,

Circumference = $2\pi r$

Therefore,

$2\pi r = 44$

$2\times\frac{22}{7}\times r = 44$

$r = 7$

Also, the width of the rectangular strip will be the height of the cylinder. Therefore,

$h = 20$

Now that we know the values of r and h, we can easily find the volume of the cylinder.

Volume = $\pi r^2 h$

$= \frac{22}{7}\times 7\times 7\times 20$

$\boxed{\text{Volume} = 3080\ \text{cm}^3}$

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