



### Surface Area and volume of A Right Circular cone Ex 20.1 Q7

**Answer :**

The formula of the total surface area of a cone with base radius ' $r$ ' and slant height ' $l$ ' is given as

$$\text{Total Surface Area} = \pi r(l + r)$$

The diameter of the base is given as 24 m. The radius of the base is half of the diameter and hence  $r = 12$  m.

Substituting the values of  $r = 12$  m and  $l = 21$  cm in the above equation and using  $\pi = \frac{22}{7}$  in specified formula,

$$\begin{aligned}\text{Total Surface Area} &= \frac{(22)(12)(12+21)}{7} \\ &= \frac{8712}{7} \\ &= 1244\frac{4}{7}\end{aligned}$$

Therefore the total surface area of the given cone is  $1244\frac{4}{7} \text{ m}^2$ .

### Surface Area and volume of A Right Circular cone Ex 20.1 Q8

**Answer :**

It is given that the curved surface area (C.S.A) of the cone is  $60\pi \text{ cm}^2$  and that the slant height is 8 cm. The formula of the curved surface area of a cone with base radius ' $r$ ' and slant height ' $l$ ' is given as

$$\text{Curved Surface Area} = \pi r l$$

$$\text{Hence, slant height, } r = \frac{(C.S.A)}{\pi l}$$

Substituting the values of C.S.A and the slant height in the above equation,

$$\begin{aligned}\text{Slant height, } r &= \frac{60\pi}{8\pi} \\ &= 7.5\end{aligned}$$

Hence the base radius of the cone with the mentioned dimensions is  $7.5 \text{ cm}$ .

### Surface Area and volume of A Right Circular cone Ex 20.1 Q9

**Answer :**

It is given that the curved surface area (C.S.A) of the cone is  $4070 \text{ cm}^2$  and that the base diameter is 70 cm. The formula of the curved surface area of a cone with base radius ' $r$ ' and slant height ' $l$ ' is given as

$$\text{Curved Surface Area} = \pi r l$$

$$\text{Hence, slant height, } l = \frac{(C.S.A)}{\pi r}$$

The base radius is half of the base diameter. And since the base diameter is given as 70 cm we can find out the base radius as,  $r = 35$  cm.

Substituting the values of C.S.A and the base radius and using  $\pi = \frac{22}{7}$  in the above equation,

$$\begin{aligned}\text{Slant height, } l &= \frac{(7)(4070)}{(22)(35)} \\ &= \frac{370}{(2)(5)} \\ &= 37\end{aligned}$$

Hence the slant height of the cone with the mentioned dimensions is  $37 \text{ cm}$ .

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