

Exercise 13C

Question 12:

Let the radius be rmetres and height be h metres.

 $\Rightarrow \qquad \qquad h \qquad = \frac{220 \times 3}{22 \times 2} = 15 \text{ m}$

 \therefore the height of the cone = 15m.

Ouestion 13:

Here, height of the cylindrical bucket= 32 m and radius = 18 cm. Now, let theradius of the heap be R cm and its slant height be ℓ cm

:. Slant height of the heap = 43.27 cm.

Question 14:

Let the curved surface areas of cylinder and cone be 8x and 5x.

Then,
$$2\pi rh = 8x$$
(i)
and, $\pi r \sqrt{h^2 + r^2} = 5x$ (ii)

Squaring both sides of equation (i), we have

$$(2\pi rh)^2 = (8x)^2$$

 $4\pi^2 r^2 h^2 = 64x^2 \dots (iii)$

From (ii) we have,

$$\pi r \sqrt{h^2 + r^2} = 5x$$

Squaring both sides,

$$\Rightarrow \qquad \pi^2 r^2 (h^2 + r^2) = 25x^2 \dots (iv)$$

$$\Rightarrow \qquad \frac{4\pi^2 r^2 h^2}{\pi^2 r^2 (h^2 + r^2)} = \frac{64}{25} \quad [\text{Divide(iii) by (iv)}]$$

$$\Rightarrow \qquad \frac{h^2}{(h^2 + r^2)} = \frac{16}{25}$$

$$\Rightarrow \qquad 9h^2 = 16r^2$$

$$\Rightarrow \qquad \frac{r^2}{h^2} = \frac{9}{16}$$

$$\Rightarrow \qquad \frac{r}{h} = \frac{3}{4}$$

The ratio of radius and height = 3:4

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