



### Exercise 19A

Question 5:

Radius of cylinder = 2.5 m

Height of cylinder = 21 m

Slant height of cone = 8 m

Radius of cone = 2.5 m

Total surface area of the rocket = (curved surface area of cone + curved surface area of cylinder + area of base)

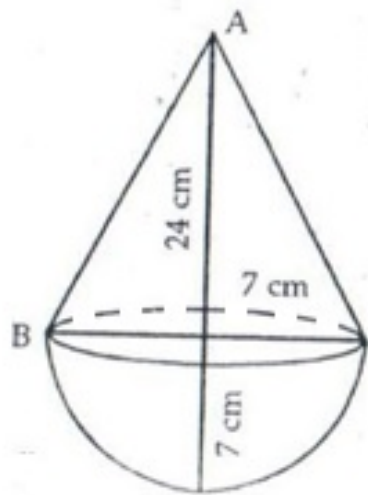
$$= (\pi r l + 2\pi r h + \pi r^2)$$

where  $l = 8$  m,  $h = 21$  m,  $r = 2.5$  m

$$= \left( \frac{22}{7} \times 2.5 \times 8 + 2 \times \frac{22}{7} \times 2.5 \times 21 + \frac{22}{7} \times 2.5 \times 2.5 \right) \text{m}^2$$

$$= (62.85 + 330 + 19.64) \text{m}^2 = 412.5 \text{m}^2$$

Question 6:



Height of cone =  $h = 24$  cm

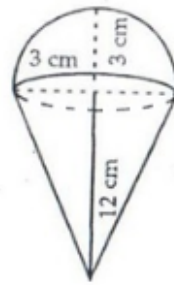
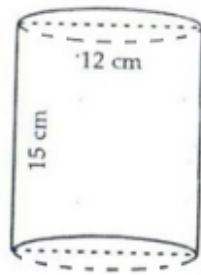
Its radius =  $7$  cm

$$\begin{aligned}\therefore \text{Slant height} &= \sqrt{(24)^2 + 7^2} \\ &= \sqrt{576 + 49} \\ &= \sqrt{625} = 25 \text{ cm}\end{aligned}$$

Total surface area of toy

$$\begin{aligned}&= (\pi r l + 2\pi r^2) \\ &= \pi r (l + 2r) \\ &= \frac{22}{7} \times 7 \times (25 + 14) \\ &= 22 \times 39 = 858 \text{ cm}^2\end{aligned}$$

Question 7:



Height of cylindrical container  $h_1 = 15\text{cm}$

Diameter of cylindrical container = 12 cm

Volume of container =  $\pi r_1^2 h_1 = \pi \times 6 \times 6 \times 15 = 540\pi \text{ cm}^2$

Height of cone  $r_2 = 12 \text{ cm}$

Diameter = 6 cm

Radius of  $r_2 = 3 \text{ cm}$

Volume of cone =  $\frac{1}{3} \pi r_2^2 h_2 = \frac{1}{3} \pi \times 3 \times 3 \times 12$   
 $= 36 \pi \text{ m}^3$

Radius of hemisphere = 3 cm

Volume of hemisphere =  $\frac{2}{3} \pi r_2^3 = \frac{2}{3} \pi \times 3 \times 3 \times 3 = 18\pi$

Volume of cone + volume of hemisphere  
 $= 36 \pi + 18 \pi = 54 \pi$

$\therefore$  Number of cones

$$= \frac{\text{Volume of container}}{\text{Volume of cone} + \text{Volume of hemisphere}}$$

$$= \frac{540\pi}{54\pi} = 10$$

Number of cones that can be filled = 10

\*\*\*\*\* END \*\*\*\*\*