

Key Answer

1) A **Cube** has a lateral surface area of 196 m^2

a) What is the area of one face?

b) What is the length of each side?

(a)

$$L.S.A = 4 * A_{\text{face}}$$

$$\frac{196}{4} = \frac{4 * A_{\text{face}}}{4}$$

$$A_{\text{face}} = \boxed{49} \text{ m}^2$$

(b)

$$A_{\text{face}} = L^2$$

$$49 = L^2 \rightarrow L = \sqrt{49} = \boxed{7 \text{ m}}$$

2) A **Cube** has a total surface area of 150 m^2

, What is the length of each side?

$$T.S.A = 6 * A_{\text{face}}$$

$$\frac{150}{6} = \frac{6 * A_{\text{face}}}{6} \rightarrow A_{\text{face}} = 25$$

$$A_{\text{face}} = L^2$$

$$25 = L^2$$

$$\rightarrow L = \sqrt{25} = \boxed{5 \text{ m}}$$

3) A **Cube** has a volume of 0.216 m^3

, What is the length of each side?

$$V = L^3 \rightarrow L = \sqrt[3]{\frac{0.216}{1000}} = \frac{6}{10} = \boxed{0.6} \text{ m}$$

4): The curved surface area of a cylinder is

$(53\pi) \text{ cm}^2$. If the height is 5 cm . calculate its **diameter**

$$C.S.A = P_{\text{base}} * h$$

$$C.S.A = 2\pi r * h$$

$$53\pi = 2\pi * r * 5$$

$$\frac{53\pi}{10} = \frac{10\pi * r}{10}$$

$$r = 5.3 \text{ cm}$$

$$\Rightarrow d = 2 * 5.3 = 10.6 \text{ cm}$$

(5): Find the height of a pyramid of volume 160 m^3 and base area 24 m^2 ?

$$V = \frac{1}{3} * A_{\text{base}} * h$$

$$160 = \frac{1}{3} * \frac{24}{1} * h$$

$$\frac{160}{8} = \frac{8 * h}{8}$$

$$h = 20 \text{ m}$$

(6): The area of the base of the cone shown below is 46 cm^2 and a height (9cm), find its volume

$$V = \frac{1}{3} * A_{\text{base}} * h$$

$$= \frac{1}{3} * 46 * \frac{9}{1} = 138 \text{ cm}^3$$

(7): If the surface area of a sphere is $784\pi \text{ cm}^2$, find its radius?

$$S.A = 4\pi r^2$$

$$784\pi = 4\pi r^2$$

$$\frac{784}{4} = r^2$$

$$196 = r^2 \rightarrow r = \sqrt{196} = 14 \text{ cm}$$

8): Find the diameter of a sphere

if its volume is $\frac{500}{3}\pi \text{ cm}^3$?

$$V = \frac{4}{3}\pi r^3$$

$$\frac{500}{3}\pi = \frac{4}{3}\pi r^3$$

$$\frac{500}{4} = \frac{4}{3} * r^3 * \frac{3}{4}$$

$$r^3 = 125$$

$$\rightarrow r = \sqrt[3]{125} = 5 \text{ cm}$$

$$d = 5 * 2 = 10 \text{ cm}$$