

Tarefa Básica - Cilindros

01. $\frac{1}{5}$ do volume

$$\begin{aligned} & 1/5 \cdot \pi r^2 h \\ & = 1/5 \cdot 10^2 \cdot 40\pi \\ & = 800\pi \end{aligned}$$

$$\pi r^2 h = 800\pi$$

$$5^2 h = 800$$

$$h = 800/25$$

$$\boxed{h = 32 \text{ cm}}$$

(A)

02. $\frac{V_1}{V_2} = \frac{1}{27}$

$$\frac{\pi (R_1)^2 \cdot h_1}{\pi (R_2)^2 \cdot h_2} = \frac{1}{27}$$

$$\frac{(R_1)^2 \cdot 2R_1}{(R_2)^2 \cdot 16R_2} = \frac{1}{27}$$

$$\left(\frac{R_1}{R_2}\right)^3 = \frac{8}{27}$$

$$\boxed{\frac{R_1}{R_2} = \frac{2}{3}}$$

(E)

03. Cilindros I

$$V = \pi r^2 h$$

$$16\pi = \pi r^2 h$$

$$r^2 h = 16$$

$$\left(\frac{h}{2}\right)^2 \cdot h = 16$$

$$\frac{h^2}{4} \cdot h = 16$$

$$h^3 = 64$$

$$\boxed{h = 4}$$

(D)

$$2\pi(3/2)rh = 2\pi r(h+r) \Rightarrow A_{l2} = A_{T2}$$

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

04. $V = \pi r^2 h$

$$\pi(r+12)^2 \cdot 4 = \pi r^2 (4+12)$$

$$\pi(r+24r+144) \cdot 4 = \pi r^2 16$$

$$\pi(4r^2 + 96r + 576) = 16\pi r^2$$

$$4r^2 + 96r + 576 = 16r^2$$

$$16r^2 - 4r^2 - 96r - 576 = 0$$

$$12r^2 - 96r - 576 = 0$$

$$r^2 - 8r - 48 = 0$$

$$\left. \begin{array}{l} 12 + -4 = 8 \\ 12 \cdot -4 = -48 \end{array} \right\} \begin{array}{l} r^2 = 12 \text{ cm} \\ r^2 = 4 \text{ cm} \end{array}$$

$$\begin{array}{c|c} 48 & 2 \\ 24 & 2 \\ 12 & 2 \\ 6 & 2 \\ 3 & 3 \\ 1 & \end{array}$$

(A)

$$5. r = 20 \text{ cm}$$

$$h = 0,8 \text{ mm} = 0,08 \text{ cm}$$

$$V = Ab \cdot h$$

$$Ab = \pi r^2$$

$$V = 400\pi \cdot 0,08$$

$$Ab = \pi 20^2$$

$$V = 32\pi$$

$$Ab = 400\pi$$

$$\boxed{V = 100,5 \text{ cm}^3} \quad (B)$$

Tarefa Básica - Pirâmides

$$01. Ab = b \cdot h$$

$$V = Ab \cdot h / 3$$

$$Ab = x \cdot 2x$$

$$48 = 2x^2 \cdot 8 / 3$$

$$Ab = 2x^2 \text{ cm}^2$$

$$16x^2 = 48 \cdot 3$$

$$x^2 = 144 / 16$$

$$x = \sqrt{9} \rightarrow \boxed{x = 3} \quad (C)$$

$$02. Ab = 80^2$$

$$A_L = 80 \cdot 50 / 2$$

$$Ab = 6400 \text{ mm}^2$$

$$A_L = 2000 \text{ mm}^2$$

$$h^2 = 40^2 + 30^2$$

$$A_T = 4 \cdot 2000 + 6400$$

$$h^2 = 1600 + 900$$

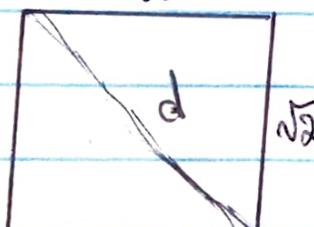
$$\boxed{A_T = 14400 \text{ mm}^2} \quad (D)$$

$$h = \sqrt{2500} = 50 \text{ mm}$$

$$(E)$$

$\sqrt{2}$

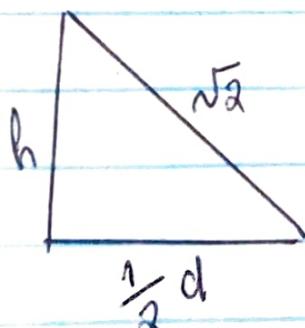
03.



$$d = l\sqrt{2}$$

$$d = \sqrt{2} \cdot \sqrt{2}$$

$$d = 2 \text{ cm}$$



$$(\sqrt{2})^2 = h^2 + 1^2$$

$$2 = h^2 + 1$$

$$h^2 = 1$$

$$\boxed{h = 1 \text{ cm}} \quad (C)$$

$$04. Ab = 3l^2 \sqrt{3} / 2$$

$$Ab = 3a^2 \sqrt{3} / 2$$

$$V = \frac{Ab \cdot h}{3}$$

$$\rightarrow V = \frac{\frac{1}{2} 3a^2 \sqrt{3}}{2} \cdot b \sqrt{3}$$

$$V = \frac{3 \cdot a^2 \cdot \cancel{b} \cdot \cancel{b}}{2} \cdot \frac{1}{\cancel{3}}$$

$$\boxed{V = \frac{3a^2 \cdot b}{2}} \quad (\text{A})$$

$$05. Ab = 3l^2 \sqrt{3} / 2$$

$$Ab = 3 \cdot 4^2 \sqrt{3} / 2$$

$$Ab = 48 \sqrt{3} / 2$$

$$Ab = 24 \sqrt{3} \text{ cm}^2$$

$$V = Ab \cdot h / 3$$

$$V = 24 \sqrt{3} \cdot 6 \sqrt{3} / 3$$

$$V = 144 \cdot \cancel{3} / \cancel{3}$$

$$\boxed{V = 144 \text{ cm}^3} \quad (\text{D})$$

$$06. 2p = 6 \text{ cm}$$

$$L = 6 / 6 = 1 \text{ cm}$$

$$Ab = 3 \cdot l^2 \sqrt{3} / 2$$

$$Ab = \frac{3 \sqrt{3}}{2} \text{ cm}^2$$

$$V = \frac{3 \sqrt{3}}{2} \cdot 8 \cdot \frac{1}{\cancel{3}}$$

$$V = \frac{8 \sqrt{3}}{2}$$

$$\boxed{V = 4 \sqrt{3} \text{ cm}^3} \quad (\text{A})$$

$$07. \text{ Pirâmide: } Ab = (2a)^2$$

$$Ab = 4a^2$$

$$V = \frac{4a^2 \cdot h_1}{3}$$

$$\text{Prisma: } Ab = a^2$$

$$V = a^2 \cdot h_2$$

$$\frac{4a^2 \cdot h_1}{2} = a^2 \cdot h_2$$

$$\frac{h_1}{h_2} = \frac{3a^2}{4a^2}$$

$$\frac{h_1}{h_2} = \frac{3}{4}$$

$$\boxed{\frac{h_1}{h_2} = \frac{3}{4}} \quad (\text{A})$$

$$08. AT = a^2 \sqrt{3}$$

$$6\sqrt{3} = a^2 \sqrt{3}$$

$$a = \sqrt{6}$$

$$h = \frac{a\sqrt{6}}{3}$$

$$h = 6 / 3$$

$$h = \frac{\sqrt{6} \cdot \sqrt{6}}{3}$$

$$\boxed{h = 2 \text{ cm}} \quad (\text{A})$$