

Tarefa Básica - Cilindros

$$1. V_L = \pi \cdot 10^2 \cdot 40 \Rightarrow V_L = 4000\pi \text{ cm}^3$$

$$\boxed{m^3 \cdot 51 = 1}$$

$$x = 4000\pi \cdot \frac{1}{5} \Rightarrow x = 800\pi \text{ cm}^3$$

5 alternativa

$$800\pi = \pi \cdot 5^2 \cdot h \Rightarrow h = \frac{800\pi}{25\pi} \Rightarrow \boxed{h = 32 \text{ cm}}$$

Alternativa A)

$$2. \quad \textcircled{C}_1 \quad V = 2\pi \cdot R^3$$

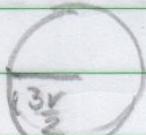
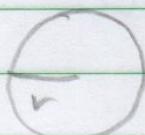
$$\textcircled{C}_2 \quad V = \pi r^2 \cdot 16r \Rightarrow V = 16\pi \cdot r^3$$

$$\frac{V_1}{V_2} = \frac{1}{27} \Rightarrow \frac{2\pi \cdot r^3}{16\pi \cdot r^3} = \frac{1}{27} \Rightarrow \left(\frac{r}{2}\right)^3 = \frac{16}{54} \Rightarrow r = \sqrt[3]{\frac{8}{27}}$$

$$\boxed{\frac{R}{r} = \frac{2}{3}}$$

Alternativa E)

3.



$$\textcircled{I} \quad A_L = 2\pi \cdot r^2 + 2\pi \cdot r \cdot h \quad \textcircled{II} \quad 16\pi = \pi r^2 \cdot h \Rightarrow r^2 h = 16\pi$$

$$\textcircled{II} \quad A_L = 2\pi \cdot \frac{3r}{2} \cdot h \Rightarrow A_L = 3\pi r \cdot h$$

$$3\pi r h = 2\pi r^2 + 2\pi r h \Rightarrow \pi r h = 2\pi r^2 \Rightarrow r = \frac{h}{2}$$

$$\left(\frac{h}{2}\right)^2 \cdot h = 16 \Rightarrow \frac{h^2}{4} \cdot h = 16 \Rightarrow h^3 = 64 \Rightarrow \boxed{h = 4}$$

Alternativa D)

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

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

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

$$12r^2 - 96r - 576 = 0 \Rightarrow r^2 - 8r - 48 = 0$$

$$S: 12 + (-4) = 8$$

$$x' = 12 \text{ cm}$$

$$P: 12 \cdot (-4) = (-48) \quad x'' = -4 \text{ não convém}$$

[Alternativa A]

$$5. V = \pi \cdot 20^2 \cdot 0,08$$

$$V = \pi \cdot 400 \cdot 0,08 \Rightarrow V = 32\pi \Rightarrow V \approx 32 \cdot 3,14$$

$$[V \approx 100,48 \text{ cm}^3]$$

[Alternativa B]

Tarefa Básica - Pirâmides

$$1. Ab = x \cdot 2x \Rightarrow Ab = 2x^2 \text{ cm}^2$$

$$48 = \frac{1}{3} \cdot 2x^2 \cdot 8 \Rightarrow 48 = \frac{16x^2}{3} \Rightarrow 144 = 16x^2$$

$$x = \sqrt{9^2} \Rightarrow [x = 3 \text{ cm}]$$

[Alternativa C]

$$2. m^2 = 30^2 + 40^2 \Rightarrow m^2 = 900 + 1600 \Rightarrow m = \sqrt{2500}$$

$$m = 50 \text{ mm}$$

$$At = 80(80+100) \Rightarrow At = 80 \cdot 180 \Rightarrow [At = 14400 \text{ mm}^2]$$

[Alternativa E]

$$3. m = \sqrt{2} \cdot \sqrt{3} \Rightarrow m = \sqrt{6} \text{ cm}$$

$$\left(\frac{\sqrt{6}}{2}\right)^2 = h^2 + \left(\frac{\sqrt{2}}{2}\right)^2 \Rightarrow \frac{6}{4} = h^2 + \frac{2}{4} \Rightarrow h^2 = \frac{6}{4} - \frac{2}{4}$$

$$h = \sqrt{1} \Rightarrow [h = 1 \text{ cm}]$$

[Alternativa C]

$$4. Ab = \frac{3\sqrt{3} \cdot a^2}{2}$$

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

[Alternativa A]

5.

$$Ab = \frac{3\sqrt{3} \cdot 4^2}{2} \Rightarrow Ab = \frac{3\sqrt{3} \cdot 16}{2} \Rightarrow Ab = 24\sqrt{3} \text{ cm}^2$$

$$V = \frac{1}{3} \cdot 24\sqrt{3} \cdot 6\sqrt{3} \Rightarrow V = \frac{144 \cdot 3}{3} \Rightarrow V = 144 \text{ cm}^3$$

[Alternativa D]

$$6. Ab = \frac{3\sqrt{3} \cdot 1^2}{2} \Rightarrow Ab = \frac{3\sqrt{3}}{2} \text{ cm}^2$$

$$V = \frac{1}{2} \cdot \frac{3\sqrt{3}}{2} \cdot 8 \Rightarrow V = 4\sqrt{3} \text{ cm}^3$$

[Alternativa A]

$$7. V_{\text{pirâmide}}: a^2 \cdot h$$

$$V_{\text{prisma}}: \frac{1}{3} \cdot 4a^2 \cdot h \Rightarrow \frac{4a^2 \cdot h}{3}$$

$$\frac{\frac{a^2 \cdot h}{3}}{\frac{4a^2 \cdot h}{3}} \Rightarrow \frac{a^2 \cdot h}{4a^2 \cdot h} \cdot \frac{3}{4a^2 \cdot h} \Rightarrow \frac{3}{4}$$

[Alternativa A]

$$8. Af = a^2\sqrt{3} \Rightarrow 6\sqrt{3} = a^2\sqrt{3} \Rightarrow a = \sqrt{6} \text{ cm}^2$$

$$h = \sqrt{6} \cdot \frac{\sqrt{6}}{3} \Rightarrow h = \frac{6}{3} \Rightarrow h = 2 \text{ cm}$$

[Alternativa A]