

Tarefa Básica - Cones

- 01) Semicírculo + raio = 20cm
Lateral do cone

$$\frac{2\pi r}{2} = \frac{2\pi \cdot 20}{2} = \frac{40\pi}{2} = 20\pi$$

$$2\pi r = 20\pi$$

$$r = 10 + \text{hip.}$$

$$10^2 + h^2 = 20^2$$

$$h^2 = 400 - 100$$

$$h^2 = 300$$

$$h = \sqrt{300}$$

$$h = 10\sqrt{3}$$

altura

de o tron.

$$\begin{array}{r|l} 300 & 2 \\ \hline 150 & 2 \\ \hline 75 & 3 \\ \hline 25 & 5 \\ \hline 5 & 5 \end{array}$$

$$25\sqrt{3}$$

- 02) altura = 12cm
volume = 640cm³

$$V = \frac{b \cdot h \cdot l}{3}$$

$$64\pi = \frac{\pi \cdot r^2 \cdot 12}{3}$$

$$64\pi = \pi r^2 \cdot 4$$

$$\frac{64\pi}{4} = \pi r^2$$

$$r^2 = 16$$

$$r = \sqrt{16}$$

$$r = 4$$

Geratriz

$$g^2 = h^2 + r^2$$

$$g^2 = 12^2 + 4^2$$

$$g^2 = 144 + 16$$

$$g = \sqrt{160}$$

$$g = 4\sqrt{10}$$

$$\begin{array}{r|l} 160 & 2 \\ \hline 80 & 2 \\ \hline 40 & 2 \\ \hline 20 & 2 \\ \hline 10 & 2 \\ \hline 5 & 5 \end{array}$$

$$20$$

$$40$$

$$20$$

$$10$$

$$5$$

$$22\sqrt{5}$$

$$05) V = \frac{1}{2} \cdot V_{\text{cilindro}} - V_{\text{cone}}$$

$$V = \frac{1}{2} \cdot \pi \cdot r \cdot h - \frac{1}{3} \cdot \pi \cdot r \cdot h$$

$$V = \frac{1}{2} \cdot \pi \cdot 3^2 \cdot 10 - \frac{1}{3} \cdot \pi \cdot r^2 \cdot h$$

$$V = \frac{1}{2} \cdot 90\pi \cdot 10 - \frac{1}{3} \cdot \pi \cdot 3$$

$$V = \frac{1}{2} \cdot 90\pi - \frac{1}{3} \cdot 3\pi$$

$$V = 45\pi - 0,99\pi$$

$$V = 44,01\pi \approx 44\pi$$

$$06) V_{\text{cone}} = \frac{A_b h}{3}$$

$$V_{\text{prisma}} = A_b h$$

$$V_{\text{prisma}} = \frac{A_b \cdot 2h}{3}$$

$$V_{\text{prisma}} = 2 \cdot V_{\text{cone}}$$

$$07) V_{ABD} = \frac{\pi \cdot l^2 \cdot l}{3} = \frac{\pi \cdot l^3}{3}$$

$$V_{BCD} = \frac{\pi \cdot l^3}{3} - \frac{\pi \cdot l^3}{3}$$

$$V_{BCD} = \frac{2\pi \cdot l^3}{3}$$

RAZÃO:

$$\frac{V_{ABD}}{V_{BCD}} = \frac{\frac{\pi \cdot l^3}{3}}{\frac{2\pi \cdot l^3}{3}} = \frac{1}{2}$$

Tarifa Básica - Troncos

$$a) V = \frac{\pi \cdot r^2 \cdot h}{3}$$

$$V = 12\pi \text{ cm}^3$$

$$\frac{V}{\pi} = \frac{h^3}{3}$$

$$V = \frac{\pi \cdot 3^2 \cdot 8}{3}$$

$$24\pi = 8h^3$$

$$V = \frac{\pi \cdot 3^2 \cdot 8}{3}$$

$$12\pi = h^3$$

$$2h^3 = 8h^3$$

$$V = 24\pi \text{ cm}^3 \rightarrow V_{\text{cone}}$$

$$h^3 = 51.2$$

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$$h^3 = \sqrt[3]{256}$$

$$h = \sqrt[3]{4^3 \cdot 4} //$$

$$\begin{array}{r|l} 256 & 2 \\ \hline 128 & 2 \\ 64 & 2 \\ 32 & 2 \\ 16 & 2 \\ 8 & 2 \\ 4 & 2 \\ 2 & 2 \\ \hline & 2 \cdot 2 \cdot \sqrt{2} \cdot \sqrt{2} \end{array}$$

$$02) \frac{V_{\text{liquido}}}{V_{\text{total}}} = \left(\frac{16^3}{20^3} \right) = \left(\frac{8}{10} \right)^3 = \frac{512}{1000} = 51.2\%$$

$$\frac{V_{\text{liquido}}}{V_{\text{total}}} = \frac{51.2}{100} = 51.2\%$$

Exemplo:

$$V_{\text{exp}} + V_{\text{liq}} = 100 V_t$$

$$V_{\text{exp}} + 51.2 = 100 V_t$$

$$V_{\text{exp}} = 100 V_t - 51.2 V_{\text{liq}}$$

$$V_{\text{exp}} = 48.8 V_t \approx 50\% //$$