

## Tarefa Básica - Cones

$$1) \quad 2\pi r = (40\pi r)/2$$

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

$$r = 10$$

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

$$h^2 = 400 - 100$$

$$h^2 = 300$$

$$h = \sqrt{300}$$

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

(A)

$$\begin{array}{r|l} 300 & 2 \\ \hline 150 & 2 \\ \hline 75 & 5 \\ \hline 15 & 5 \\ \hline 3 & 3 \\ \hline \end{array}$$

$$2) \quad \frac{A_b \cdot 12}{3} = 64\pi$$

$$12A_b = 192\pi$$

$$A_b = 16\pi$$

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

$$r^2 = 16$$

$$r = 4$$

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

$$g^2 = 16 + 144$$

$$g^2 = 160$$

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

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

(B)



$$3) A_b = \pi r^2$$

$$36\pi = \pi r^2$$

$$r = 6 \quad h = 6$$

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

$$V = \frac{1}{3} \pi 36 \cdot 6$$

$$V = 72\pi$$

(A)

$$4) \quad \begin{array}{c} \triangle \\ 2 \end{array}$$

$$2^2 = 2x^2$$

$$4 = 2x^2$$

$$x^2 = 2$$

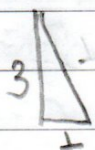
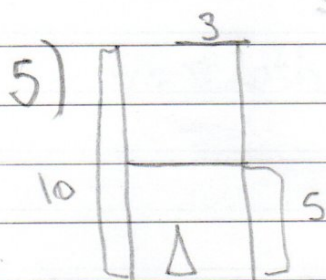
$$x = \sqrt{2}$$

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

$$V = \frac{\pi (\sqrt{2})^2 \sqrt{2}}{3}$$

$$\frac{2\pi\sqrt{2}}{3}$$

(E)



$$V_{\text{c}} = \pi r^2 h = 3^2 \cdot 5\pi = 45\pi$$

$$V_{\text{co}} = (\pi r^2 h) / 3 = 1^2 \pi \cdot \frac{1}{3} \cdot 3$$

$$V_{\text{co}} = \pi$$

(E)

$$V_{\text{total}} = 45\pi - \pi = 44\pi$$



$$6) \sqrt{c} = \frac{2}{3} A_b \cdot h$$

$$\sqrt{p} = A_b \frac{2}{3} h$$

$$\frac{\sqrt{p}}{\sqrt{c}} = \frac{A_b \frac{2}{3} h}{\frac{2}{3} A_b h} = 2 \quad (A)$$

$$7) \sqrt{ABC} = \sqrt{V_{cone}} = \frac{1}{3} \pi r^2 h$$

$$\sqrt{ADC} = \sqrt{V_{cil}} - \sqrt{V_{cone}} = \pi r^2 h - \frac{1}{3} \pi r^2 h$$

$$\sqrt{ADC} = \frac{2}{3} \pi r^2 h$$

$$\frac{\sqrt{ABC}}{\sqrt{ADC}} = \frac{\frac{1}{3} \pi r^2 h}{\frac{2}{3} \pi r^2 h} = \frac{1}{2} \quad (E)$$



## Tarefa Básica - Troncos

$$1) \quad V_{\text{cone}} = \frac{\pi 3^2}{3} \cdot 8 = 24\pi$$

$$V = 12$$

$$\frac{V}{v} = \frac{H^3}{h^3}$$

$$\frac{24\pi}{12\pi} \cdot \frac{8^3}{h^3} \Rightarrow 2 = \frac{8^3}{h^3} \Rightarrow 2h^3 = 8^3$$

$$h^3 = \frac{512}{2} \Rightarrow h = \sqrt[3]{256}$$

$$h = 4\sqrt[3]{4}$$

(E)

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

$$2) \quad \frac{V}{v} = \left(\frac{16}{20}\right)^3 = \left(\frac{4}{5}\right)^3$$

$$\frac{V}{v} = \frac{64}{125}$$

$$\frac{64}{125} \approx 0,51$$

(C)

50%



3)

$$V_{\text{cone}} = \frac{1}{3} \pi r^2 h \quad \frac{V_2}{V_1} = \frac{1}{2}$$

$$\frac{1}{2} = \left( \frac{x}{h} \right)^3$$

$$\frac{1}{2} = x^3 / h^3 \quad x = \frac{\sqrt[3]{h^3}}{\sqrt[3]{2}}$$

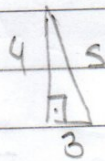
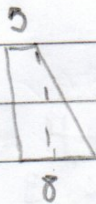
$$h^3 = 2x^3$$

$$\frac{x^3}{2} = \frac{h^3}{2}$$

$$x = \frac{h}{\sqrt[3]{2}}$$

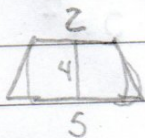
$$x = \frac{h \sqrt[3]{4}}{2}$$

4)



4 cm

5)



$$A = \pi \cdot 10 \cdot 5 = 50\pi \quad g = 5$$

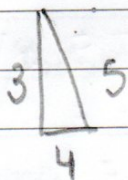
$$V = \frac{\pi \cdot 4}{3} (5^2 + 2^2 + 10)$$

$$V = \frac{4}{3} \pi (25 + 4 + 10)$$

$$V = \frac{4 \cdot \pi \cdot 39}{3} = 52\pi$$



6)

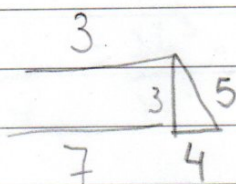


$$V = \pi \frac{3}{3} (7^2 + 3^2 + 21)$$

$$V = \pi \cdot 49 + 9 + 21$$

$$V = 79\pi$$

①



7)

$$\frac{R}{H} = \frac{r}{h}$$

$$r = \frac{Rh}{H}$$

$$V_C = \frac{\pi R^2 H}{3}$$

$$V_c = \frac{\pi \left(\frac{Rh}{H}\right)^2 h}{3} = \frac{\pi R^2 h^3}{3H^2}$$

$$V_t = \frac{\pi R^2 (H^3 - h^3)}{3H^2}$$

$$\frac{\pi R^2 h^3}{3H^2} = \frac{\pi R^2 (H^3 - h^3)}{3H^2} \Rightarrow \pi R^2 h^3 = \pi R^2 (H^3 - h^3)$$

$$h^3 = H^3 - h^3 \Rightarrow 2h^3 = H^3 \Rightarrow h^3 = H^3/2$$

$$h = \frac{\sqrt[3]{H^3}}{\sqrt[3]{2}}$$

$$h = \frac{H}{\sqrt[3]{2}} \cdot \sqrt[3]{2^2}$$

$$h = \frac{H \sqrt[3]{4}}{2}$$

①