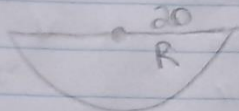


CONES

1-

SEMICÍRCULO =



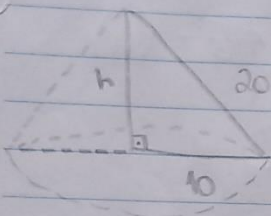
Área Semicírculo = A_L

$$\frac{\pi R^2}{2} = \pi R \cdot 20$$

$$20 = R$$

R = geratriz

$$R = 10 //$$



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

$$400 = 100 + h^2$$

$$h = \sqrt{300} \Rightarrow 10\sqrt{3} //$$

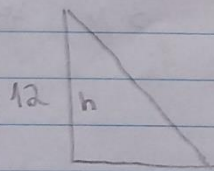
LETRA (A)

300	2
150	2
75	3
25	5
5	5
1	

2-

$$V = 64$$

$$h = 12$$

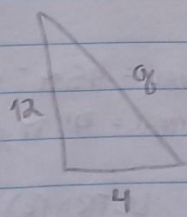


$$V = \frac{1}{3} \cdot \pi \cdot R^2 \cdot h$$

$$64\pi = \frac{1}{3} \cdot \pi \cdot R^2 \cdot 12$$

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

$$R^2 = 16 \Rightarrow \sqrt{16} = 4 //$$



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

$$g^2 = 144 + 16$$

$$g = \sqrt{160} \Rightarrow 4\sqrt{10} //$$

LETRA (B)

160	2
80	2
40	2
20	2
10	2
5	5
1	

3-

$$R = h =$$

$$A_b = 36\pi$$

$$A_b = \pi R^2$$

$$36\pi = \pi R^2$$

$$R^2 = 36$$

$$R = 6 //$$

$$h = 6$$

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

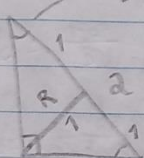
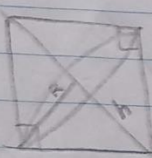
$$V = \frac{1}{3} \cdot \pi \cdot 36 \cdot 6$$

$$V = 216 \cdot \frac{1}{3} \cdot \pi$$

$$V = 72\pi //$$

LETRA (A)

4-



$$R = 1$$

$$h = 1$$

$$V_{\text{SOLIDO}} = 2 \cdot V_{\text{CONE}}$$

$$V_s = 2 \cdot \frac{1}{3} \cdot \pi \cdot R^2 \cdot h$$

$$V_s = 2 \cdot \frac{1}{3} \cdot \pi \cdot 1^2 \cdot 1$$

$$V_s = \frac{2\pi}{3} //$$

LETRA (E)

5-

$$V_c = \pi R^2 h$$

$$V_c = \pi \cdot 9 \cdot 10$$

$$V_c = 90\pi //$$

$$V_{\text{CONE}} = \frac{1}{3} \cdot \pi \cdot 1^2 \cdot 3$$

$$V_{\text{CONE}} = \pi //$$

$$V_{\text{FINAL}} = \frac{V_c - V_{\text{CONE}}}{2}$$

$$V_{\text{FINAL}} = \frac{90\pi - \pi}{2}$$

$$V_{\text{FINAL}} = 44\pi //$$

VOLUME CILINDRO

VOLUME CONE

LETRA (E)

6-

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

$$\frac{2\pi R^2 h}{3}$$

$$\Rightarrow \frac{6\pi R^2 h}{3\pi R^2 h} = \frac{6}{3}$$

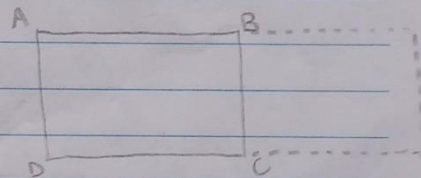
$$V_P = \frac{\pi R^2 \cdot 2h}{3}$$

2//
LETRA (A)

BASE DE MESMA ÁREA

7-

$$V_{ABC} = \frac{\pi L^2 \cdot L}{3} = \frac{\pi L^3}{3}$$



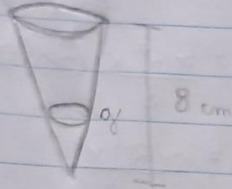
$$V_{ADC} = \frac{\pi L^3}{3} - \frac{\pi L^3}{3} = \frac{2\pi L^3}{3}$$

$$\frac{V_{ABC}}{V_{ADC}} = \frac{\frac{\pi L^3}{3}}{\frac{2\pi L^3}{3}} = \frac{3\pi L^3}{6\pi L^3} = \frac{1}{2}$$

2//
LETRA (E)

TRONCOS

1 -



$$V_{\text{cone}} = \frac{1}{3} \cdot \pi \cdot R^2 \cdot h$$

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

$$V_{\text{cone}} = \frac{72\pi}{3} \Rightarrow 24\pi \text{ cm}^3$$

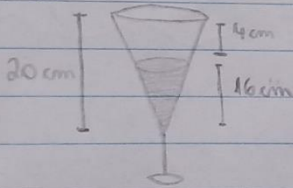
$$\text{METADE DO VOLUME} = \frac{24}{2} = 12\pi \text{ cm}^3 //$$

$$\frac{V}{V_c} = \left(\frac{H}{h}\right)^3 \Rightarrow \frac{12\pi}{24\pi} = \left(\frac{8}{h}\right)^3 \Rightarrow \frac{1}{2} = \left(\frac{8}{h}\right)^3 \Rightarrow h^3 = \frac{512}{2} \Rightarrow h = \sqrt[3]{256}$$

$$h = 4\sqrt[3]{4} \text{ cm} //$$

LETRA (E)

2 -



$$\frac{V_s}{V_c} = \left(\frac{16}{20}\right)^3$$

$$V_e = V_c - V_s$$

$$V_e = V_c - \frac{64}{125} \cdot V_c$$

$$V_s = \frac{64}{125} \cdot V_c$$

$$V_e = \frac{125V_c - 64V_c}{125}$$

$$V_e = \frac{61V_c}{125}$$

$$V_e = 0,488 V_c \approx 50\% \cdot V_c$$

LETRA (C)

$$3 - \frac{R}{h} = \frac{r}{x} \rightarrow r = \frac{R \cdot x}{h}$$

$$V_{\text{cyl}} = \frac{\pi R^2 h}{3}$$

$$V_T = \frac{\pi R^2 h}{3} - \frac{\pi R^2 x^3}{3h^2}$$

$$V_{\text{cap}} = \frac{\pi r^2 x}{3} = \frac{\pi \left(\frac{R \cdot x}{h}\right)^2 \cdot x}{3}$$

$$V_{\text{cap}} = \frac{\pi R^2 x^3}{3h^2}$$

$$V_T = \frac{\pi R^2 h^3}{3h^2} - \frac{\pi R^2 x^3}{3h^2}$$

$$V_T = \frac{\pi R^2 (h^3 - x^3)}{3h^2} \rightarrow \frac{\pi R^2 x^3}{3h^2} = \frac{\pi R^2 (h^3 - x^3)}{3h^2} \rightarrow \pi R^2 x^3 = \pi R^2 (h^3 - x^3)$$

$$x^3 = h^3 - x^3$$

$$2x^3 = h^3 \rightarrow x = \frac{\sqrt[3]{h^3}}{\sqrt[3]{2}} = x = h \cdot \frac{\sqrt[3]{2^2}}{\sqrt[3]{2}} \Rightarrow x = h \frac{\sqrt[3]{4}}{2} //$$

$$4 - s^2 = h^2 + 3^2$$

$$h^2 = 25 - 9 \rightarrow h = \sqrt{16} = 4 \text{ cm}$$

5 -

$$A_b = \pi \cdot 2^2$$

$$A_B = \pi \cdot 5^2$$

$$xy^2 = 4^2 + 3^2$$

$$A_b = 4\pi \text{ m}^2$$

$$A_B = 25\pi \text{ m}^2$$

$$xy^2 = 16 + 9 \rightarrow xy = \sqrt{25} = 5 \text{ m}$$

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

$$A_L = \pi (5+2) \cdot 5$$

$$A_L = 35\pi \text{ m}^2$$

$$V = \frac{\pi \cdot 4 \cdot 39}{3} \Rightarrow \frac{52\pi \text{ m}^3}{3} //$$

$$A_{\text{TOTAL}} = 4\pi + 25\pi + 35\pi$$

$$A_T = 64\pi \text{ m}^2 //$$

$$6 - 5^2 = h^2 + 4^2$$

$$h^2 = 25 - 16$$

$$h = \sqrt{9} = 3 //$$

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

$$V = 79 \pi \text{ cm}^3 // \text{ LETRA (D)}$$

$$7 - \frac{R}{H} = \frac{x}{h} \rightarrow x = \frac{R h}{H}$$

$$V_{\text{cop}} = \frac{\pi R^2 H}{3} //$$

$$V_{\text{cop}} = \frac{\pi x^2 h}{3} \rightarrow \frac{\pi \left(\frac{R \cdot h}{H}\right)^2 \cdot h}{3} \rightarrow \frac{\pi R^2 h^3}{3 H^2} //$$

$$V_T = \frac{\pi R^2 H}{3} - \frac{\pi R^2 h^3}{3 H^2} \rightarrow \frac{\pi R^2 H^3}{3 H^2} - \frac{\pi R^2 h^3}{3 H^2}$$

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

$$\pi R^2 h^3 = \pi R^2 (H^3 - h^3) \rightarrow h^3 = H^3 - h^3$$

$$2h^3 = H^3$$

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

$$h = \frac{\sqrt[3]{H^3}}{\sqrt[3]{2}} \Rightarrow h = \frac{H}{\sqrt[3]{2}} \cdot \sqrt[3]{2^2} \Rightarrow h = \frac{H \sqrt[3]{4}}{2} //$$