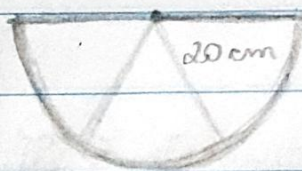
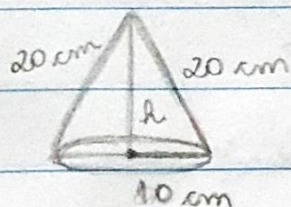


Tarefa Básica

1



$$2r = g$$

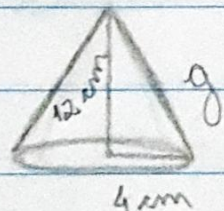
$$2r = 20$$

$$r = 10 \text{ cm}$$

$$h = \frac{20\sqrt{3}}{2} = 10\sqrt{3}$$

Alternativa (A)

2



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

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

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

$$r = 4 \text{ cm}$$

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

$$g^2 = 144 + 16$$

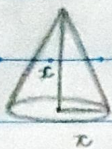
$$g^2 = 160$$

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

Alternativa (B)

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

③



$$36\pi = \pi x^2$$

$$x^2 = 36$$

$$x = 6 \text{ cm}$$

$$V = \frac{1}{3} \pi x^3$$

$$3$$

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

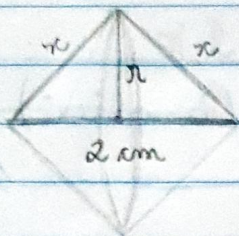
$$3$$

Alternativa (A)

$$V = 216\pi = 72\pi \text{ cm}^3$$

$$3$$

④



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

$$x^2 = 2$$

$$x = \sqrt{2} \text{ cm}$$

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

$$2 = x^2 + 1$$

$$x = 1 \text{ cm}$$

$$V = 2 \cdot \frac{1}{3} \pi (1)^2 \cdot 1$$

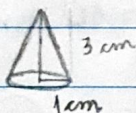
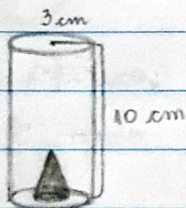
$$3$$

$$V = \frac{2\pi}{3} \text{ cm}^3$$

$$3$$

Alternativa (E)

⑤



$$V_{\text{CILINDRO}} = \pi 3^2 \cdot 10$$

$$2$$

$$2$$

$$V_{\text{CILINDRO}} = 45\pi \text{ cm}^3$$

$$2$$

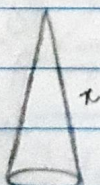
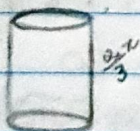
$$V_{\text{CONE}} = \frac{1}{3} \pi 1^2 \cdot 3 = \pi \text{ cm}^3$$

$$3$$

$$45\pi - \pi = 44\pi$$

(E)

⑥



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

$$V = \frac{2\pi x^3}{3}$$

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

$$3$$

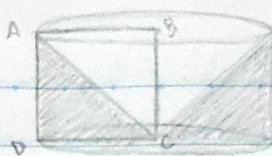
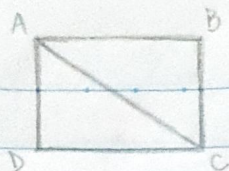
$$V_P = 6x^3 = 2$$

$$V_C = 3x^3$$

Alternativa

(A)

7



= VPINTADO

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

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

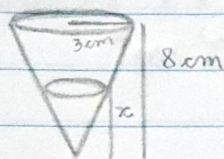
$$= 3 \pi r^2 h = 1$$

$$V_{\text{PINT.}} = \frac{3 \pi r^2 h}{3} - \frac{1 \pi r^2 h}{3} = \frac{2 \pi r^2 h}{3}$$

Alternativa (E)

Tarefa Básica

1



$$V_T = \frac{1}{3} \pi 3^2 \cdot 8$$

$$V_1 = \text{SUCO} = 12 \pi \text{ cm}^3$$

$$V_T = 24 \pi \text{ cm}^3$$

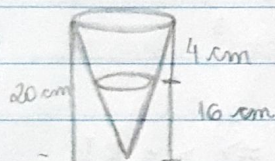
$$V_2 = \text{ÁGUA} = 12 \pi \text{ cm}^3$$

$$V_T = \left(\frac{8}{x} \right)^3 \Rightarrow \frac{512}{x^3}$$

$$\frac{24 \pi}{12 \pi} = \frac{512}{x^3} \Rightarrow 2 = \frac{512}{x^3} \Rightarrow x^3 = 256 \Rightarrow x = \sqrt[4]{256} \text{ cm}$$

Alternativa (E)

2



$$\frac{V_{\text{LEITE}}}{V_{\text{COPO}}} = \left(\frac{16}{20} \right)^3 = \frac{4096}{8000} = 0,512 = 51,2\%$$

$$100\% - 51,2\% = 48,8\% \approx 50\%$$

Alternativa (C)

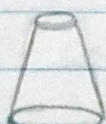
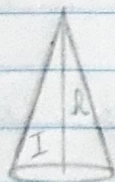
COPO

LEITE

ESPUMA

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

3

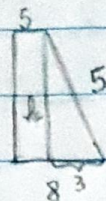
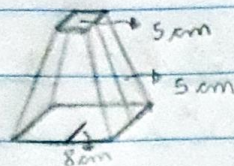


$$V_I = \frac{1}{3} \pi r^2 h$$

$$V_I = \frac{1}{3} \pi R^2 H$$

$$V_{II} = \pi$$

④

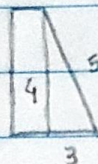
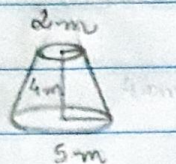


$$5^2 = l^2 + 3^2$$

$$25 = l^2 + 9$$

$$l = 4 \text{ cm}$$

⑤



$$A_T = \pi 5^2 + \pi 2^2 + 2\pi(5+2)5$$

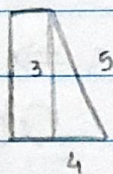
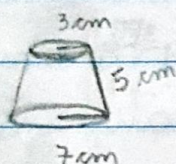
$$A_T = 29\pi + 25\pi + 10\pi$$

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

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

$$V = \frac{4\pi}{3} \cdot 19 \Rightarrow \frac{76\pi}{3} \text{ m}^3$$

⑥

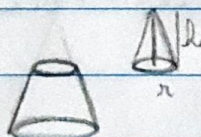
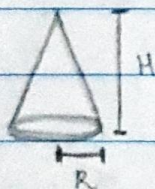


$$V = \frac{3\pi}{3} (7^2 + 3^2 - 7 \cdot 3)$$

$$V = \pi (49 + 9 - 21)$$

$$V = 37\pi \text{ cm}^3$$

⑦



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

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

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

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

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

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

$$h^3 = H^3 - h^3$$

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

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

2

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

Alternativa (A)