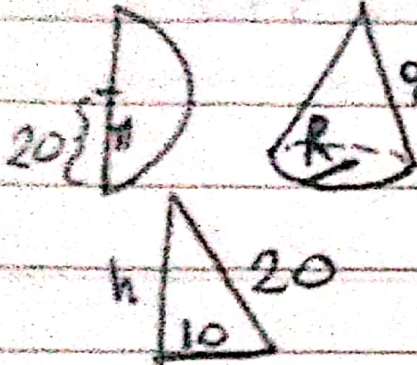Nome: Gustavo Murilo Cavalcante Carvalho   CT11348

Tarefa Básica - Cones
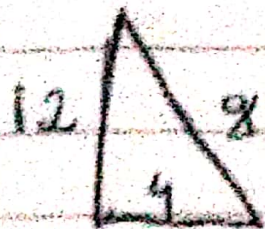
1- $g = n = 20$ $\dfrac{2\pi \cancel{n}}{2} = 2\pi R \rightarrow R = \dfrac{\pi n}{2\pi} = \dfrac{n}{2} = \dfrac{20}{2} = 10$

$h^2 = 20^2 - 10^2 = 300$

$h = \sqrt{3 \cdot 10 \cdot 10} = 10\sqrt{3} \quad (A)$

2- $\text{Volume} = 1/3 \cdot A_{base} \cdot h = 1/3 \cdot A_{base} \cdot 12 = 4 A_{base}$

$64\pi = 4 A_{base} \rightarrow A_{base} = 16\pi$
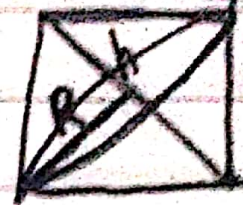
$16\pi = \pi R^2 \rightarrow R^2 = 16 \rightarrow R = 4$

$g^2 = 144 + 16 = 160$

$g = \sqrt{160} = \sqrt{4 \cdot 4 \cdot 10} = 4\sqrt{10} \quad (B)$

$3-\ 36\pi = \pi R^2 \rightarrow R^2 = 36 \rightarrow R = 6$

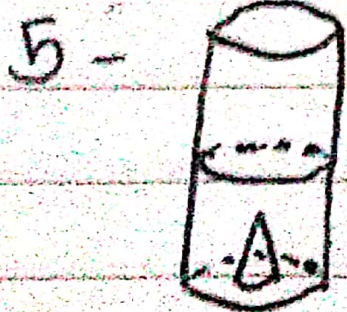$V = 1/3 \cdot 36\pi \cdot 6 = 2 \cdot 36\pi = \underline{72\pi}\ (A)$

$4-$

$R = 1$
$h = 1$

$\boxed{2\ cones}$

$A_{base} = \pi R^2 = \pi 1^2 = \pi$

$V = 2\left(\dfrac{1}{3}\pi \cdot 1\right) = \boxed{\dfrac{2\pi}{3}}\ (E)$

$5-$

$V_{cilindro} = \pi 3^3 \cdot 10 = 90\pi$

$V_{cone} = 1/3 \cdot \pi \cdot 3 = \pi$

(E)

$V_{liquido} = (90\pi / 2) - \pi = 45\pi - \pi = \underline{44\pi}$

6 - $V_{cone} = \dfrac{1}{3} \cdot 1 \cdot 1 = \dfrac{1}{3}$ $\qquad$ $V_{prisma} = 1 \cdot \dfrac{2}{3} = \dfrac{2}{3}$

$$\left(\; \underline{} \; \right) \quad \dfrac{V_{prisma}}{V_{cone}} = \dfrac{\dfrac{2}{3}}{\dfrac{1}{3}} = \dfrac{6}{3} = 2 \quad (A)$$

7 -

ABC

$$\frac{1}{3} \text{ do total}$$

ADC

$$= \frac{2}{3} \text{ do Total}$$

$$\frac{ABC}{ADC} = \frac{\frac{1}{3}}{\frac{2}{3}} = \frac{3}{6} = \frac{1}{2} \quad (E)$$
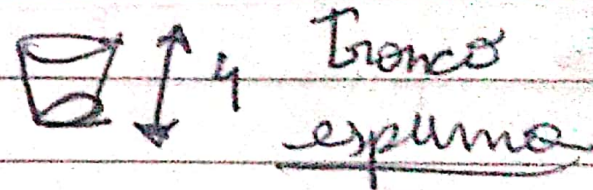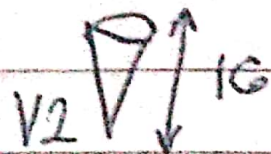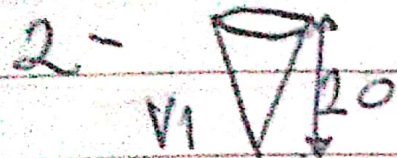
Tarefa Básica — Troncos

1- $V_{cone} = 1/3 \cdot 9\pi \cdot 8 = 3\pi \cdot 8 = 24\pi$ $\qquad$ $\left\{ 24\pi/2 = 12\pi \right.$

$\dfrac{V_{cone\,2}}{V_{cone\,1}} = \left(\dfrac{x}{8}\right)^3 \rightarrow \dfrac{12}{24} = \dfrac{1}{2} = \dfrac{x^3}{8^3} \rightarrow x^3 = \dfrac{8^3}{2} = 4 \cdot 8^2$

$x^3 = 4 \cdot 8^2 = 256$

$\rightarrow x = \sqrt[3]{256} = \sqrt[3]{4 \cdot 4 \cdot 4 \cdot 4} = 4\sqrt[3]{4}$ $\quad$ (E)

2-

$\dfrac{V_2}{V_1} = \left(\dfrac{16}{20}\right)^3 = \left(\dfrac{4}{5}\right)^3 = \dfrac{64}{125} = 0,512$ $\qquad$ 51%

tronco $= 100 - 51 = 49\% \approx 50\%$ $\quad$ (C)
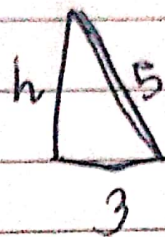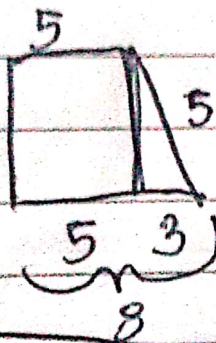
3-
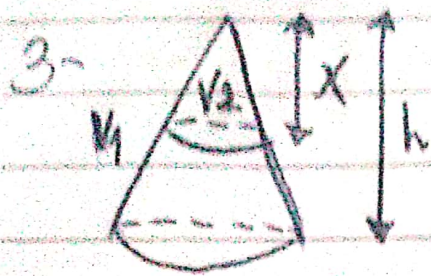
$$\frac{V_2}{V_1} = \frac{1}{2} = \left(\frac{x}{h}\right)^3 \qquad x^3 = \frac{h^3}{2}$$

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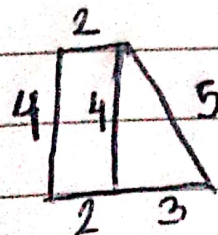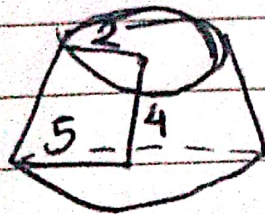
4-

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

$$5 \overbrace{ 3}^{} \big)$$
$$8$$

5-

$$A_{base} = \pi 5^2 = 25\pi$$
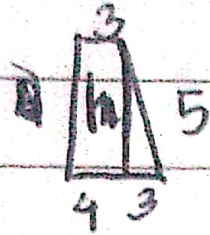
$$A_{base\,2} = \pi 2^2 = 4\pi$$

$$A\ell = \pi(5+2)5 = 35\pi$$

$$A_{total} = 25\pi + 35\pi + 4\pi$$
$$A_{total} = 64\pi$$

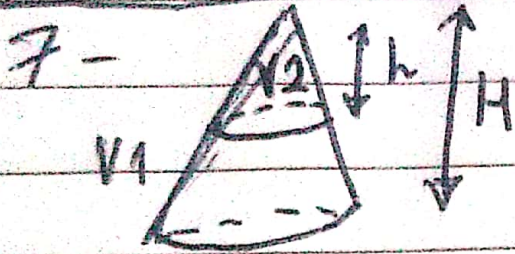$$V = \frac{4\pi}{3}(25 + 4 + 10) = \frac{4 \cdot 39\pi}{3} = 4 \cdot 13\pi = 52\pi$$

6 –

$$h^2 = 25 - 9$$
$$h = 4$$

(D)

$$V = \frac{3\pi}{3}(7^2 + 3^2 + 7\cdot 3) = \pi(49 + 9 + 21) = \cancel{} = 79\pi$$

7 –

$$\frac{V2}{V1} = \frac{1}{2} = \left(\frac{h}{H}\right)^3 = \frac{h^3}{H^3}$$

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