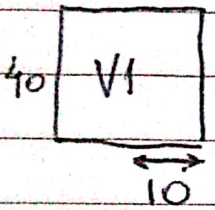
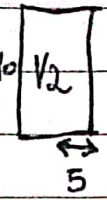
Nome: Gustavo Murilo Cavalcante Carvalho CTII348

Tarefa Básica - Cilindros

1- 

$V_1 = \pi 10^2 \cdot 40$

$V_1 = 4.000\pi\ cm^3$



$V_2 = \pi 5^2 \cdot 40$

$V_2 = 1000\pi\ cm^3$

$\frac{1}{5} \cdot 4000\pi = 800\pi\ cm^3 \rightarrow \pi \cdot 5^2 \cdot h = 800\pi\ cm^3$

$h = \frac{800\pi}{25\pi} = 32\ cm$ (A)

2- $V_{C1} = \pi R_{C1}^2 \cdot 2R$

$V_{C1} = 2\pi R_{C1}^3$

$V_{C2} = \pi (R_{C2})^2 \cdot (2(R_{C2})) \cdot 8$

$V_{C2} = 16\pi (R_{C2})^3$

$\frac{V_{C1}}{V_{C2}} = \frac{2\pi (R_{C1})^3}{16\pi (R_{C2})^3} = \frac{(R_{C1})^3}{8(R_{C2})^3} = \frac{1}{27}$

$1 = \frac{27(R_{C1})^3}{8(R_{C2})^3} \rightarrow \sqrt[3]{1} = 1 = \sqrt[3]{\frac{27(R_{C1})^3}{8(R_{C2})^3}} = \frac{3(R_{C1})}{2(R_{C1})} = 1$

$\frac{R_{C1}}{R_{C2}} = \frac{2}{3}$

(E) $\frac{R_{C1}}{R_{C2}} = \frac{2}{3}$

3- $V = 16\pi = 2\pi R^3$

$R^3 = 16\pi / 2\pi = 8$

$R = \sqrt[3]{8} = 2$

$h = 2 \cdot R$

$h = 2 \cdot 2 = 4$ (D)

4- $\pi(R+12)^2 \cdot 4 = \pi R^2 (4+12)$

$(R^2 + 24R + 144) \cdot 4 = 16R^2$

$4R^2 + 96R + 576 = 16R^2$

$12R^2 - 96R - 576 = 0$

$R^2 - 8R - 48 = 0$

$\Delta = 64 - 4 \cdot 1 \cdot -48 = 64 + 192 = 256$

$\frac{8 \pm \sqrt{256}}{2} = \frac{8 \pm 16}{2}$ → -4 (não convém)

12

(A)

$R = 12$ cm

5- $V = \pi \cdot R^2 \cdot h$

$0{,}8\,mm = 0{,}08\,cm$

$V = \pi \cdot 20^2 \cdot 0{,}08$

$V = 400 \cdot 0{,}08 \cdot \pi = 32\pi$

$V \cong 32 \cdot 3{,}14 = 100{,}5\ cm^3$ (B)

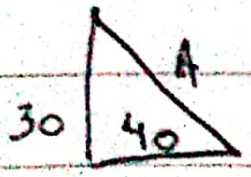
Tarefa Básica - Piramide

1- $A \cdot b = 2x \cdot x = 2x^2$

$V = \frac{Ab}{3} \cdot h \rightarrow 48 = \frac{2x^2 \cdot 8}{3} \rightarrow 144 = 16x^2$ (C)

$x^2 = 144/16 \rightarrow x = 12/4 = 3$

2-



$A^2 = 30^2 + 40^2$

$A = 50\,mm$

$A_{base} = 80^2$

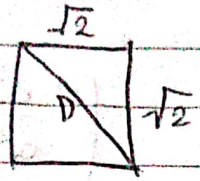
$A_{base} = 6400\,mm^2$

$A_L = 4(80 \cdot 50/2) = 4 \cdot 40 \cdot 50 = 4 \cdot 2000 = 8000\,mm^2$

$A_{total} = 8000 + 6400 = 14.400\,mm^2$ (E)

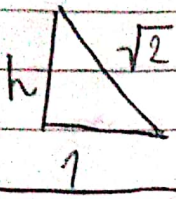
spiral

3- 



$D = l\sqrt{2}$

$D = \sqrt{2}\sqrt{2} = 2$



$\sqrt{2}^2 = h^2 + 1^2$

$h^2 = 2 - 1 = 1$

$h = \sqrt{1}$

$h = 1$ (C)

4- Area Hexagono $= \frac{6l^2\sqrt{3}}{4} = \frac{6a^2\sqrt{3}}{4}$ cm²

$V = \frac{\text{Area base} \cdot h}{3} = \frac{\frac{6a^2\sqrt{3}}{4} \cdot b\sqrt{3}}{3} = \frac{6 \cdot 3 \cdot a^2 \cdot b}{12} = \frac{3a^2b}{2}$ cm³ (A)

5- Area Hexagono $= \frac{6l^2\sqrt{3}}{4} = \frac{6 \cdot 4^2\sqrt{3}}{4} = 6 \cdot 4\sqrt{3} = 24\sqrt{3}$ cm²

$V = \frac{24\sqrt{3}}{3} \cdot c\sqrt{3} = \frac{24 \cdot c \cdot 3}{3} = 24 \cdot c = 144$ cm³

6- Perimetro = c Lados = 6 Lado = 6/6 = 1 cm

Area Hexagono $= \frac{6 \cdot 1 \cdot \sqrt{3}}{4} = \frac{c\sqrt{3}}{4}$ cm²

$V = \frac{\frac{c\sqrt{3}}{4}}{3} \cdot 8 = \frac{c \cdot 8\sqrt{3}}{12} = \frac{48\sqrt{3}}{12} = 4\sqrt{3}$ cm³

7- $A_{cubo} = (2a)^2 = 4a^2$

$a^2 \cdot h_1 = (4a^2/3) \cdot h_2^2 \rightarrow 3a^2 \cdot h_1 = 4a^2 \cdot h_2^2$

$\frac{a^2 h_2}{a^2 h_1} = \boxed{\frac{3}{4}}$ (A)

8- $C_0\sqrt{3} = l^2\sqrt{3}$

$l^2 = C$

$l = \sqrt{C}$

$h = \frac{l\sqrt{C}}{3} = \frac{\sqrt{C}\sqrt{C}}{3} = \frac{C}{3} = 2$ cm

(A)