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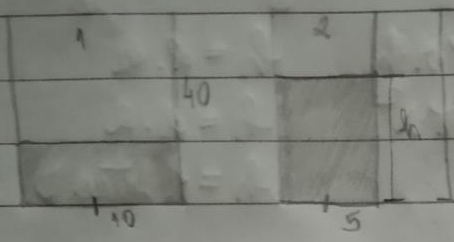
# Tarefa Básica - Cilindros

01.




$V_1 = \pi . 10^2 . 40$ $V_{AGUA1} = \frac{1}{5} . V_1$

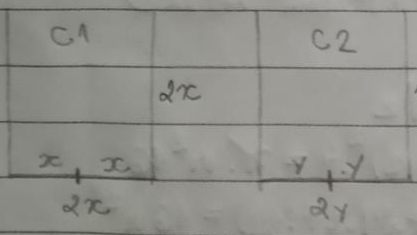
$V_1 = 4000\pi$ $V_{A1} = \frac{4000\pi}{5} = 800\pi$

$V_{A1} = V_{A2}$ $V_{A2} = \pi . 5^2 . h$

$800\pi = \pi 25 h$

$h = \frac{800}{25} = 32$ Letra A

02.




$V_{C1} = \pi x^2 2x$ $V_{C2} = \pi y^2 . 16y$

$V_{C1} = 2x^3\pi$ $V_{C2} = 16y^3\pi$

$\frac{V_{C1}}{V_{C2}} = \frac{2x^3\pi}{16y^3\pi} = \frac{1}{27}$ $\Rightarrow 27x^3 = 8y^3$

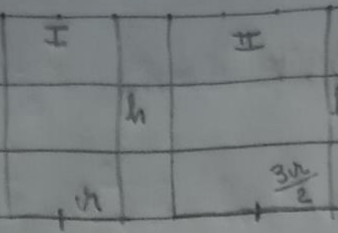
$x^3 = \frac{8y^3}{27}$

$x = \sqrt[3]{\frac{8y^3}{27}}$

$x = \frac{2y}{3}$

$\frac{x}{y} = \frac{2}{3}$ Letra E

03.




$A_{T_I} = 2\pi r^2 + 2\pi r h$

$A_{L_I} = 2\pi \cdot \frac{3r}{2} \cdot h = 3\pi r h$

$V_I = 16\pi$

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

$r^2 h = 16$

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

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

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

$h = 2r$

$h = 2 \cdot r$

$h = 2 \cdot 2$

$h = 4$ Letra D

$r^2 \cdot 2r = 16$

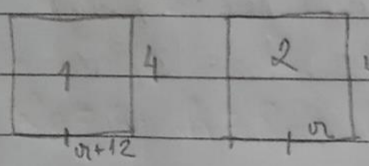
$2r^3 = 16$

$r^3 = 16/2$

$r = \sqrt[3]{8}$

$r = 2$

04)




$V_1 = V_2$

$\pi (r+12)^2 \cdot 4 = \pi \cdot r^2 16$

$4(r^2 + 24r + 144) = 16r^2$

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

$16r^2 - 4r^2 - 96r - 576 = 0$

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

$\Delta = (-96)^2 - 4.12.(-576)$

$\Delta = 9216 + 27648$

$\Delta = 36864$

$r = \frac{96 \pm \sqrt{36864}}{2.12} = \frac{96 \pm 192}{24} =$ $r_1 = -4$ não convém

$r_2 = 12$ Letra A

05 $0,8\,mm = 0,08\,cm$

$V = \pi . 400 . 0,08$

$V = 32\pi$

$V \cong 100,5$ Letra B

# Tarefa Básica - Pirâmides

01. $a = x$, $b = 2x$, $h = 8$

$V = 48\,cm^3$

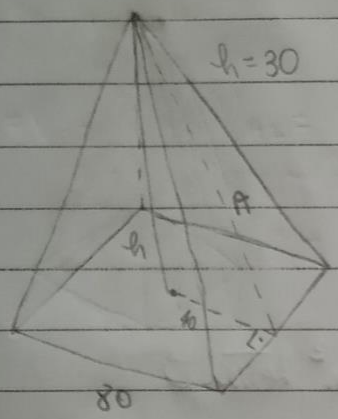
$V = \frac{2x \cdot x \cdot 8}{3} \Rightarrow 48 \cdot 3 = 16x^2$

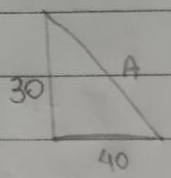
$x^2 = 144/16$

$x = \sqrt{9} = 3$

Letra C

02.




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

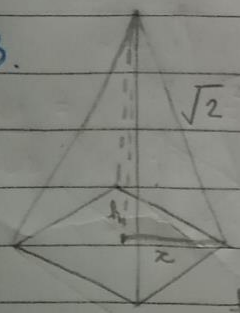
$A = \sqrt{2500} = 50$

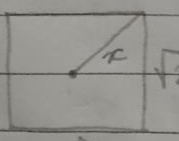
$A_T = \ell^2 + 4 \cdot \frac{\ell \cdot h}{2}$

$A_T = 80^2 + 4 \cdot \frac{80 \cdot 50}{2}$

$A_T = 6400 + 8000 = 14\,400$ Letra E

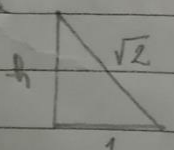
03.




$x = d/2$

$x = \frac{\ell\sqrt{2}}{2} = \frac{\sqrt{2}\sqrt{2}}{2} = \frac{2}{2} = 1$




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

$h^2 = 2 - 1$

$h = \sqrt{1} = 1\,cm$ Letra C

04) $l = a$ ; $h = b\sqrt{3}$

$$V = \frac{6 \cdot \frac{l^2\sqrt{3}}{4} \cdot h}{3} = \frac{6 \cdot \frac{a^2\sqrt{3}}{4} \cdot b\sqrt{3}}{3} = \frac{3 \cdot 3a^2b}{6} = \frac{9a^2b}{6}$$

$V = \frac{3a^2b}{2}$ Letra A

05. $l = 4$ ; $h = 6\sqrt{3}$

$$V = \frac{6 \cdot \frac{4^2\sqrt{3}}{4} \cdot 6\sqrt{3}}{3} = \frac{3 \cdot 16 \cdot 3 \cdot 6}{6} = 144\ cm^3$$ Letra B

06. $2p = 6$ ; $h = 8$ $\quad l = \frac{2p}{6} = \frac{6}{6} = 1$

$$V = \frac{6 \cdot \frac{1^2\sqrt{3}}{4} \cdot 8}{3}$$

$$V = \frac{48\sqrt{3}}{12}$$

$V = 4\sqrt{3}$ Letra A

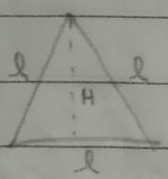
07. $l = 2a$ $\quad V_{PIR} = \frac{(2a)^2 \cdot h_1}{3}$ $\quad V_{PRIS} = a^2 \cdot h_2$

$V_{PIR} = V_{PRIS}$

$\frac{4a^2 h_1}{3} = a^2 h_2$

$4a^2 h_1 = 3a^2 h_2$

$\frac{h_1}{h_2} = \frac{3a^2}{4a^2} = \frac{3}{4}$ Letra A

08. 

$\times 4$ $\quad A_T = 6\sqrt{3}$ $\quad A_T = \frac{4 \cdot b \cdot h}{2}$

$h = \frac{l\sqrt{6}}{3}$

$h = \frac{\sqrt{6}\sqrt{6}}{3}$

$h = \frac{6}{3} = 2$ Letra A

$6\sqrt{3} = \frac{4 \cdot l \cdot \frac{l\sqrt{3}}{2}}{2}$

$12\sqrt{3} = 2l^2\sqrt{3}$

$l^2 = 12/2$

$l = \sqrt{6}$