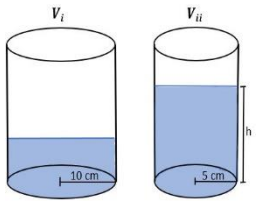
cilindros

Ana Beatriz Ribeiro Silva – CTII 317

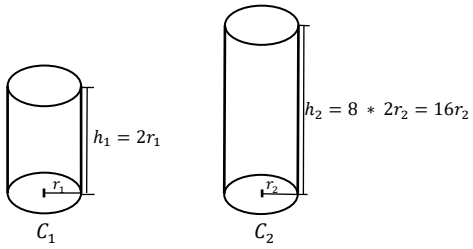
01-



$$V_i = \pi * 100 * \frac{1}{5} * 40$$
$$V_i = \pi * 20 * 40$$
$$V_i = 800\pi\ cm^3$$

$$V_i = V_{ii}$$
$$800\pi = \pi * 25 * h$$
$$\boldsymbol{h = 32\ cm\ (A)}$$

02-

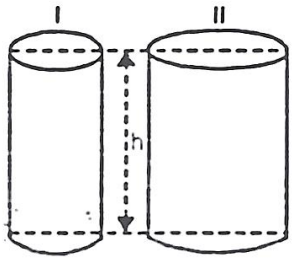


$$\frac{\boldsymbol{V_1}}{\boldsymbol{V_2}} = \frac{\mathbf{1}}{\mathbf{27}} \rightarrow \frac{\boldsymbol{\pi(r_1)^2 * h_1}}{\boldsymbol{\pi(r_2)^2 * h_2}} = \frac{\mathbf{1}}{\mathbf{27}}$$

$$\frac{\boldsymbol{(r_1)^2 * h_1}}{\boldsymbol{(r_2)^2 * h_2}} = \frac{\mathbf{1}}{\mathbf{27}} \rightarrow \left(\frac{\boldsymbol{r_1}}{\boldsymbol{r_2}}\right)^{\mathbf{3}} = \frac{\mathbf{8}}{\mathbf{27}}$$

$$\boldsymbol{\frac{r_1}{r_2} = \frac{2}{3}\ (E)}$$

03-



04-

$$V = \pi.r^2.h$$
$$V = \pi.r^2.4$$

$$\pi.(r+12)^2.4 = \pi.r^2.(4+12)$$
$$\pi.(r^2 + 24r + 144).4 = \pi.r^2.16$$
$$\pi.(4r^2 + 96r + 576) = \pi.16.r^2$$
$$4r^2 + 96r + 576 = 16r^2$$
$$16r^2 - 4r^2 - 96r - 576 = 0$$
$$12r^2 - 96r - 576 = 0$$

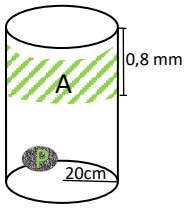
$$r^2 - 8r - 48 = 0$$
$$\Delta = \mathbf{(-8)^2 - 4 * 1 * -48}$$
$$\Delta = \mathbf{64 + 192}$$
$$\Delta = \mathbf{256}$$

$$\boldsymbol{x = \frac{-(-8) \pm \sqrt{256}}{2*1} \rightarrow \frac{8 \pm 16}{2}}$$

$$\boldsymbol{x_i = \frac{8 + 16}{2} = 12cm\ \ (A)}$$

$$\boldsymbol{x_{ii} = \frac{8 - 16}{2} = -8}$$

05-



$$\mathbf{0,8mm \rightarrow 0,08\ cm}$$
$$V_P = V_A$$

$$\pi * \mathbf{20^2} * \mathbf{0,08} = \mathbf{32}\pi\ \boldsymbol{cm^3}$$
$$V_P \cong 32 * 3{,}14$$
$$\boldsymbol{V_P \cong 100{,}5cm^3\ (B)}$$

pirâmides

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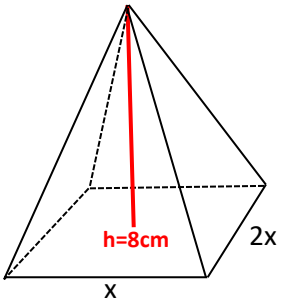
01-



$V = 48cm^3;\ V = \frac{A_b * h}{3}$

$48 = \frac{2x^2 * 8}{3}$

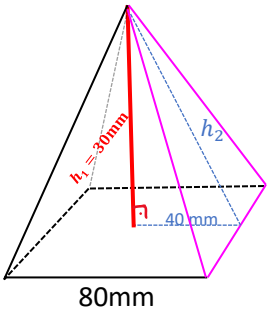
$16x^2 = 48 * 3$

$x^2 = 9$

$x = \sqrt{9}$

$\boldsymbol{x = 3}$ $\boldsymbol{(C)}$

02-



$80^2 = 6400\ mm^2$

$h_2{}^2 = 40^2 + 30^2$

$h_2{}^2 = 50$

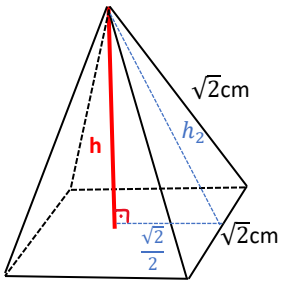
$A_\Delta = \frac{80 * 50}{2}$

$A_\Delta = 2000mm^2$

$A_B = 4 * 2000 + 6400$

$\boldsymbol{A_B = 14400}$ $\boldsymbol{(E)}$

03-



$h_2 = \frac{\sqrt{3}*\sqrt{2}}{2}$

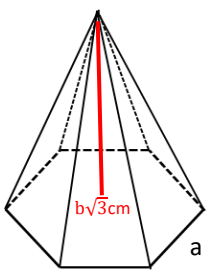
$h_2 = \frac{\sqrt{6}}{2}$

$\left(\frac{\sqrt{6}}{2}\right)^2 = \left(\frac{\sqrt{2}}{2}\right)^2 + h^2$

$h^2 = \frac{3}{2} - \frac{1}{2}$

$h^2 = \frac{2}{2} \Rightarrow$ $\boldsymbol{h = 1cm}$ $\boldsymbol{(C)}$

04-



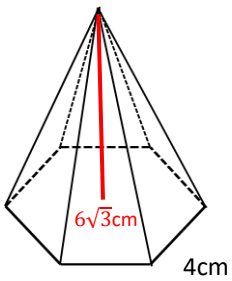
$A_B = \frac{3 * a^2 * \sqrt{3}}{2}$

$V = \frac{\left(\frac{3 * a^2 * \sqrt{3}}{2}\right) * b\sqrt{3}}{3}$

$V = \frac{\frac{3 * a^2 * \sqrt{3}}{2} * b}{\sqrt{3}}$

$\boldsymbol{V = \frac{3a^2 * b}{2}}$ $\boldsymbol{(A)}$

05-



$A_B = \frac{3 * 4^2 * \sqrt{3}}{2}$

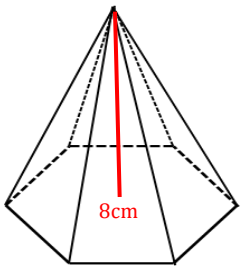
$A_B = 24\sqrt{3}$

$V = \frac{24\sqrt{3} * 6\sqrt{3}}{3}$

$V = 24 * 6$

$\boldsymbol{V = 144cm^3}$ $\boldsymbol{(D)}$

06-



perímetro$_{Base}$ $= 6\ cm$, logo $l = 1cm$

$A_B = \frac{3 * 1^2 * \sqrt{3}}{2}$

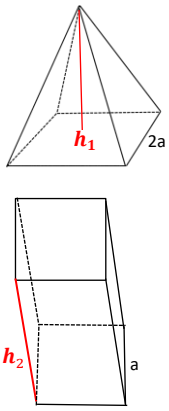
$A_B = \frac{3\sqrt{3}}{2}$

$V = \frac{\frac{3\sqrt{3}}{2} * 8}{3}$

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

$\boldsymbol{V = 4\sqrt{3}}$ $\boldsymbol{(A)}$

07- .



$V\Delta = \frac{(2a)^2 * h_1}{3}$

$V\Delta = \frac{4a^2 * h_1}{3}$

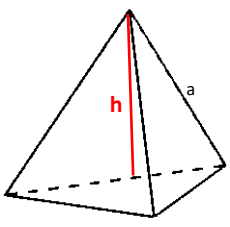
$V\square = a^2 * h_2$

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

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

$\boldsymbol{\frac{h_1}{h_2} = \frac{3}{4}}$ $\boldsymbol{(A)}$

08- .



$A_T = 6\sqrt{3}cm^2$

$6\sqrt{3} = a^2\sqrt{3}$

$6\sqrt{3} - a^2\sqrt{3} = 0$

$-\sqrt{3} * (a + \sqrt{6}) * (a - \sqrt{6}) = 0$

$a = \pm\sqrt{6}$

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

$\boldsymbol{h = 2cm}$ $\boldsymbol{(A)}$