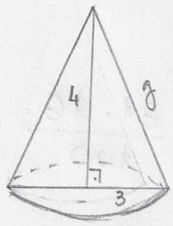
Lista de Cones



(1)




a) $A_b = \pi \cdot 3^2 = 9\pi \ cm^2$

b) $V = \frac{1}{\cancel{3}} \cdot \cancel{9}^{3}\pi \cdot 4 = 12\pi \ cm^3$

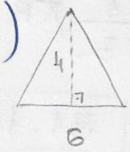
c) $g^2 = 4^2 + 3^2 \Rightarrow g = 5 cm$

d) $A_l = \pi \cdot R g = \pi \cdot 3 \cdot 5$

$A_l = 15\pi \ cm^2$

e) $A_t = 15\pi + 9\pi = 24\pi \ cm^2$

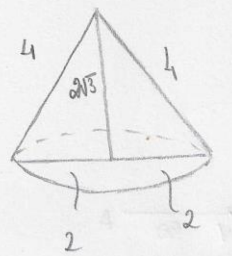
f)




$A = \frac{6 \cdot 4}{2} = 12 \ cm^2$

(2) $R = 2$; $h = 2\sqrt{3}$

$g = 4$




a) $A_b = \pi \, 2^2 = 4\pi \ cm^2$

b) $h = 2\sqrt{3} \ cm$

c) $V = \frac{1}{3} \cdot 4\pi \cdot 2\sqrt{3} = \frac{8\sqrt{3}\pi}{3} \ cm^3$

d) $g = 4 \ cm$

e) $A_l = \pi \cdot 2 \cdot 4 = 8\pi \ cm^2$

f) $A_t = 8\pi + 4\pi$

$= 12\pi \ cm^2$

g) $A = \frac{4 \cdot 2\sqrt{3}}{2} = 4\sqrt{3} \ cm^2$

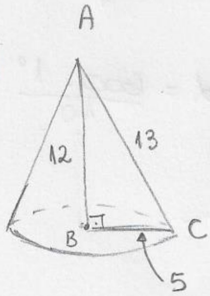
(3) $V = \frac{1}{\cancel{3}} \cancel{\pi} R^2 \cdot \cancel{6}^{2} = 800 \cancel{\pi}$

$2R^2 = 800$

$R^2 = 400 \ \therefore R = 20 \ m$

(4)

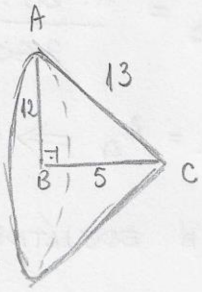
a)




$A_l = \pi \cdot 5 \cdot 13$

$A_l = 65\pi \ cm^2$

b)



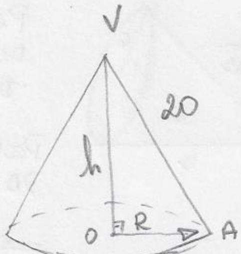

$A_l = \pi \cdot 12 \cdot 13$

$A_l = 156\pi \ cm^2$

(5)


$A_\Delta = \frac{\pi \cdot 20^2}{2}$

$A_\Delta = 200\pi \ cm^2$




$A_l = \pi \cdot R \cdot 20$

$A_l = 20\pi R$

$A_\Delta = A_l$

$\Rightarrow 20\cancel{\pi} R = 200\cancel{\pi} \Rightarrow R = 10 \ cm$

Pitágoras $\Delta VOA$

$20^2 = 10^2 + h^2$

$400 - 100 = h^2$

$h^2 = 300$

$h = 10\sqrt{3} \ cm$ //

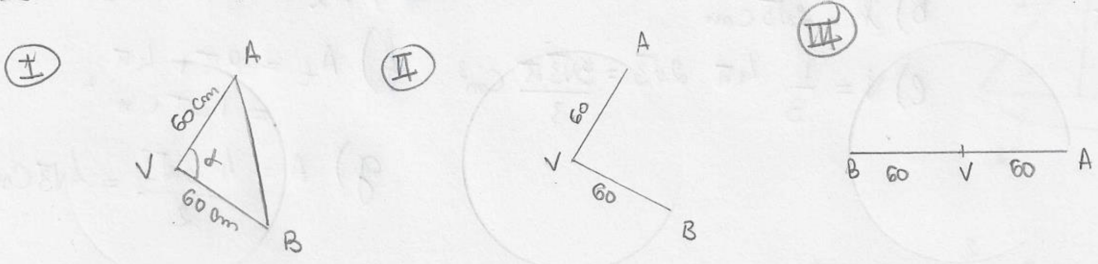
(6) $V_1 = \frac{1}{3} \cdot \pi \cdot 4^2 \cdot 10$ $\quad\Big\}\quad$ $V_2 = \frac{1}{3} \pi R^2 \cdot 10$

$V_1 = \frac{160\pi}{3}\ cm^3$ $\qquad$ $V_2 = 81\% \cdot V_1$

$$\Rightarrow \cancel{\frac{1}{3}} \cancel{\pi} R^2 \cdot 1\cancel{0} = \frac{81}{100} \cdot \frac{16\cancel{0}\cancel{\pi}}{\cancel{3}} \Rightarrow R^2 = \frac{81 \cdot 16}{100}$$

$$\Rightarrow R = \sqrt{\frac{81 \cdot 16}{100}} = \frac{9 \cdot 4}{10} \quad \therefore R = 3{,}6\ cm \quad (c)$$

(7) A PLANIFICAÇÃO DE UM CONE SÓ PODE SER DE UMA DAS TRÊS FORMAS ABAIXO




PELO ENUNCIADO, PODEMOS CONCLUIR QUE (I) ACONTECE.

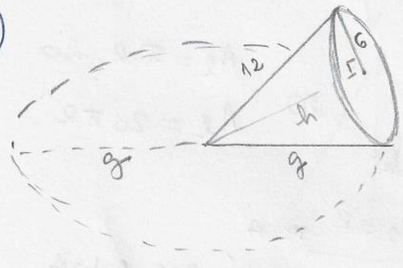
$A_\ell = \pi \cdot 10 \cdot 60$ $\quad\Big\}\quad$ $A_\Delta = \frac{\pi \cdot 60^2 \cdot \alpha}{360°} = \frac{\pi \cdot 36\cancel{00} \cdot \alpha}{36\cancel{0}°} = \frac{10\pi \cdot \alpha}{1°}$

$A_\ell = 600\pi\ cm^2$

$$A_\ell = A_\Delta \Rightarrow \frac{10\cancel{\pi} \cdot \alpha}{1°} = 600\cancel{\pi} \Rightarrow \alpha = \frac{600 \cdot 1°}{10}$$

$\Rightarrow \alpha = 60° \Rightarrow \Delta AVB$ É EQUILÁTERO $\therefore \overline{AB} = 60\ cm$

(8)




PERÍMETRO DA BASE DO CONE $= 2\pi \cdot 6 = 12\pi\ cm$

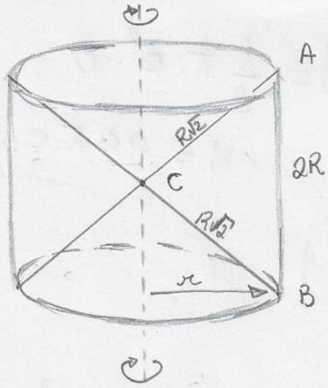
PERÍMETRO DA TRAJETÓRIA $= 24\cancel{\pi}\ cm = 2\cancel{\pi}\ g$

$\Rightarrow g = 12\ cm$. $\qquad$ PITÁGORAS: $12^2 = 6^2 + h^2$

$\Rightarrow h = 6\sqrt{3}\ cm$

$$V = \frac{1}{\cancel{3}} \cdot \pi \cdot 6^2 \cdot \overset{2}{\cancel{6}}\sqrt{3} \quad \therefore V = 72\pi\sqrt{3}\ cm^3$$

(9) (2)



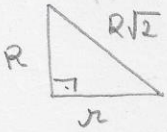

$V = V_{cilindro} - 2V_{cone}$

$V = \pi r^2 \cdot 2R - 2 \cdot \frac{1}{3}\pi r^2 \cdot R$

$V = 2\pi R r^2 - \frac{2\pi}{3} R r^2$

$V = \frac{\cancel{4}\pi R r^2}{3} = \cancel{4}\pi\sqrt{3}$

$\Rightarrow \boxed{R r^2 = 3\sqrt{3}}$




$\longrightarrow$ Pitágoras

$r = R$

$\Rightarrow R \cdot R^2 = 3\sqrt{3} \Rightarrow R^3 = 3\sqrt{3}$

$\Rightarrow R^3 = \sqrt{27} = \sqrt{3^3}$

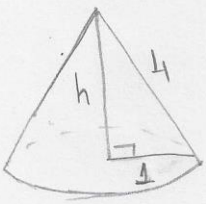
$\Rightarrow R^3 = (\sqrt{3})^3 \therefore R = \sqrt{3}$ m

(d)

(10) $A_{setor} = \frac{1}{4} \cdot \pi \cdot 4^2 = 4\pi \text{ cm}^2$

$A_\ell = \pi \cdot R \cdot 4$

$\Rightarrow 4\cancel{\pi}R = 4\cancel{\pi} \Rightarrow R = 1$ cm




$4^2 = h^2 + 1^2$

$h^2 = 16 - 1$

$h = \sqrt{15}$ cm

$V = \frac{1}{3}\pi \cdot 1^2 \cdot \sqrt{15}$

$\therefore V = \frac{\sqrt{15}\,\pi}{3}$ cm$^3$ (c)

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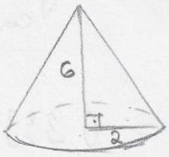
(1) $h = 6$ cm

$R = 2$ cm




a) $A_b = 4\pi \text{ cm}^2$

b) $V = \frac{1}{3} 4\pi \cdot 6 = 8\pi \text{ cm}^3$

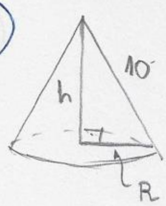
c) $g = 2\sqrt{10}$ | $g^2 = 36 + 4 = 40 \Rightarrow g = 2\sqrt{10}$ cm

d) $A_\ell = \pi \cdot 2 \cdot 2\sqrt{10} = 4\pi\sqrt{10} \text{ cm}^2$

e) $A_t = 4\pi\sqrt{10} + 4\pi = 4\pi(\sqrt{10} + 1) \text{ cm}^2$

f) $A = \frac{4 \cdot 6}{2} = 12 \text{ cm}^2$

(2)




$A_\ell = \cancel{\pi} R 1\cancel{0} = 6\cancel{0}\cancel{\pi}$

$\Rightarrow R = 6\ dm$

$100 = h^2 + 6^2$

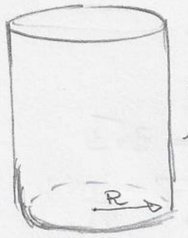
$100 - 36 = h^2$

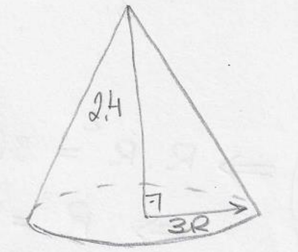
$h^2 = 64 \ \therefore\ h = 8\ dm$

$\rightarrow V = \frac{1}{3}\pi \cdot 6^2 \cdot 8$

$V = 96\pi\ cm^3$

(3)




$V_{cone} = \frac{1}{3}\pi \cdot (3R)^2 \cdot 2,4$

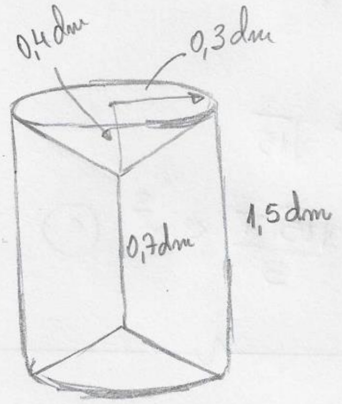
$V_{cone} = 7,2\pi R^2$

$V_{cil} = \pi \cdot R^2 \cdot h$

$V_{cone} = 1,2 \cdot V_{cil} \Rightarrow 7,2\cancel{\pi}\cancel{R^2} = \cancel{\pi}\cancel{R^2} \cdot h \cdot 1,2$

$\Rightarrow h = \frac{7,2}{1,2} \ \therefore\ h = 6\ m$ (b)

(4)




$V_{cil} = \pi \cdot 0,3^2 \cdot 1,5$

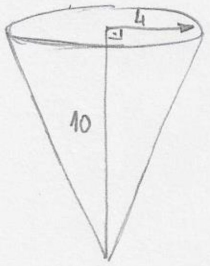
$V_{cil} = 0,405\ \ell$

$V_{cone} = \frac{1}{\cancel{3}}\cancel{\pi} \cdot 0,3^2 \cdot 0,4$

$V_{cone} = 0,036\ \ell$

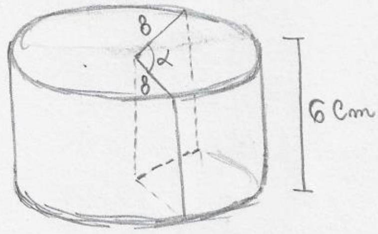
$V = 0,405 - 2 \cdot 0,036 = 0,333\ \ell$ (b)

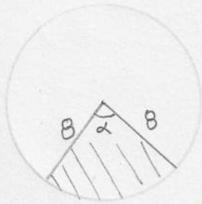
⑤ 




$$V_{RALADOR} = \frac{1}{3}\pi \cdot 4^2 \cdot 10 = \frac{160\pi}{3}\ cm^3$$

$$90\%\ V_{RALADOR} = \frac{\overset{3}{\cancel{9}}}{\cancel{10}} \cdot \frac{16\cancel{0}\pi}{\cancel{3}} = 48\pi\ cm^3$$



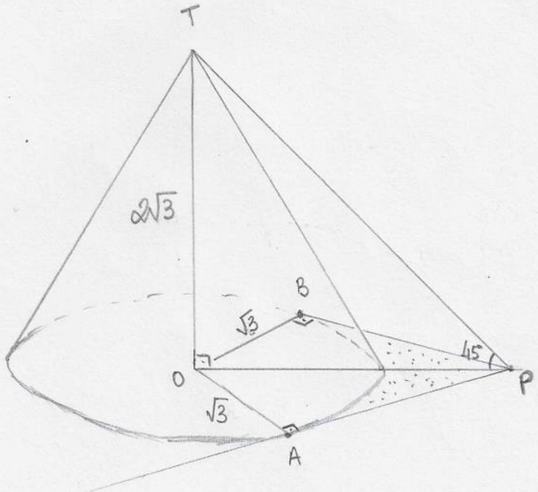

$$A_{SETOR} = \frac{\pi \cdot 8^2 \cdot \alpha}{360°} = \frac{\overset{8}{\cancel{64}}\pi\alpha}{\underset{45}{\cancel{360°}}}$$

$$A_{SETOR} = \frac{8\pi\alpha}{45°}$$

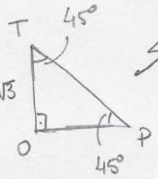
$$V_{QUEIJO} = \frac{8\pi\alpha}{\underset{15°}{\cancel{45°}}} \cdot \overset{2}{\cancel{6}} = \frac{16\pi\alpha}{15°}$$

$$\Rightarrow \frac{16\cancel{\pi}\alpha}{15°} = 48\cancel{\pi} \Rightarrow \alpha = \frac{\overset{3}{\cancel{48}} \cdot 15°}{\cancel{16}} \quad \therefore \alpha = 45° \quad \text{ⓐ}$$

⑥



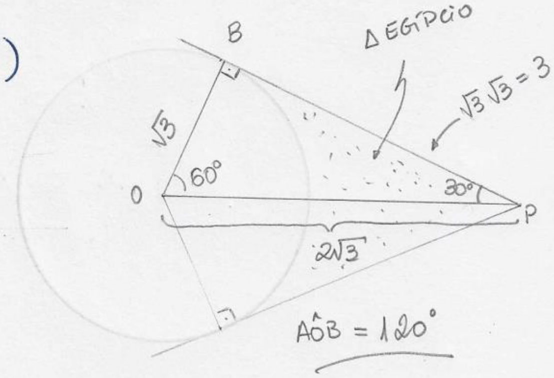

a)




ISÓSCELES

$\overline{OP} = 2\sqrt{3}$

b)




$A\hat{O}B = 120°$

c) $A = 2A_{\Delta} - A_{\underset{120°}{SETOR}}$

$$A_{\Delta} = \frac{\sqrt{3} \cdot 3}{2}$$

$$A_{\underset{120°}{SETOR}} = \frac{\pi \cdot (\sqrt{3})^2 \cdot \cancel{120°}}{\underset{3}{\cancel{360°}}} = \frac{\pi \cdot 3}{3} = \pi$$

$$A = \cancel{2} \cdot \frac{3\sqrt{3}}{\cancel{2}} - \pi$$

$$\therefore A = 3\sqrt{3} - \pi$$