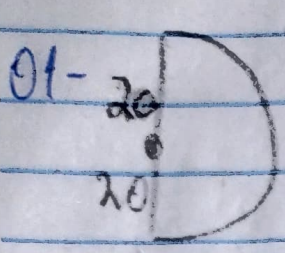
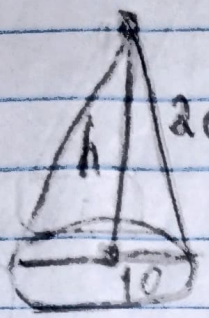
Exercícios - Cones

01-





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

$400 - 100 = h^2$

$h = \sqrt{300}$

$h = 10\sqrt{3}$

$d : 20$

$2r = 20$

$r = 10$

300	2
150	2) 2
75	3
25	5) 5
5	5
1	

(A)

02- $h = 12$ cm $V = 64\pi$ cm³

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

$64\pi = \frac{12\pi r^2}{3}$

$64\pi = 4\pi r^2$

$r^2 = \frac{64\pi}{4\pi} = 16$

$r = \sqrt{16} = 4$ cm

$g^2 = h^2 + r^2$

$g^2 = 144 + 16$

$g = \sqrt{160}$

$g = 4\sqrt{10}$ cm

160	2
80	2) 2
40	2) 2
20	2) 2
10	10
1	

(B)

03- $r = h$

$A_{base} = 36\pi$ cm²

$A_{base} = \pi r^2$

$36\pi = \pi r^2$

$r^2 = \frac{36\pi}{\pi}$

$r = \sqrt{36} = 6$ cm

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

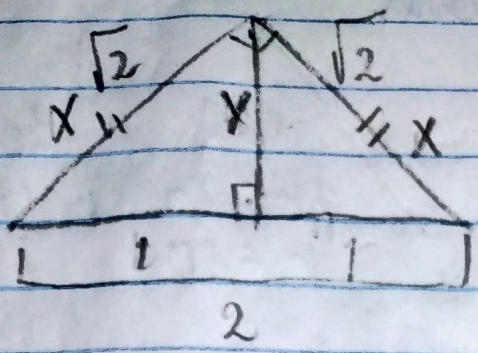
$V = \frac{1}{3}\pi \cdot 6^2 \cdot 6$

$V = \frac{216\pi}{3}$

$V = 72\pi$ cm³

(A)

04-



$x^2 = x^2 + x^2$

$2^2 = 2x^2$

$x^2 = 2$

$x = \sqrt{2}$

$V = \frac{1}{3}\pi r^2 h$

$V = \frac{1}{3}\pi . 1^2 . 1$

$V = \frac{\pi}{3}$ ⇒ girar a figura resulta em 2 cones, então: $2V = \frac{2\pi}{3}$

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

$2 = 1 + y^2$

$y = 1$

(E)

05- $V_{cilindro} = \pi . r^2 . (h/2)$

$= \pi . 9 . 5$

$= 45\pi\ u^3$

$V_{cone} = \frac{1}{3} . \pi . r^2 . h$

$= \frac{3}{3}\pi$

$= \pi$

(E)

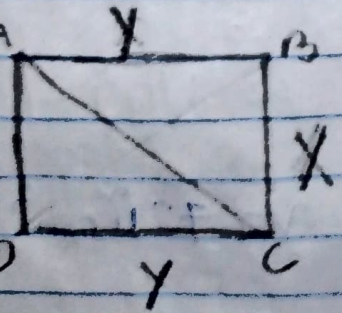
$V_{líquido} = V_{cilindro} - V_{cone} = 45\pi - \pi = 44\pi$

06- $\frac{h_P}{h_C} = \frac{2}{3}$

$\frac{V_P}{V_C} = \frac{A_b . h_P}{\frac{1}{3} A_b . h_C} = \frac{2}{\frac{3}{3}} = 2$

(A)

07-



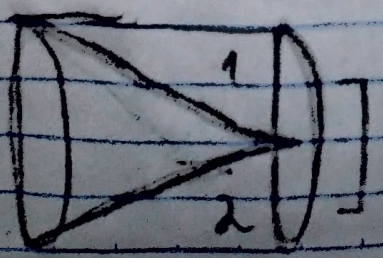
$V_{ABC} + \left(\frac{1}{3}\pi x^2 . y\right) = \frac{\pi x^2 y}{6}$

$\frac{V_{ABC}}{V_{ADC}} = \frac{\frac{\pi x^2 y}{6}}{\frac{\pi x^2 y}{3}}$

$\frac{V_{ABC}}{V_{ADC}} = \frac{1}{\frac{6}{3}}$

$\frac{V_{ABC}}{V_{ADC}} = \frac{3}{6}$

$\frac{V_{ABC}}{V_{ADC}} = \frac{1}{2}$



Exercícios - Teleaula

01- $V_{Maior} = \frac{1}{3}\pi \cdot R^2 \cdot H$ $\quad V_{Menor} = \frac{1}{2} V_{Maior}$

$= \frac{1}{3} \cdot \pi \cdot 9 \cdot 8$ $\quad = \frac{24\pi}{2}$

$V_{Maior} = 24\pi \text{ cm}^3$ $\quad V_{Menor} = 12\pi \text{ cm}^3$ (E)

$\frac{V_{Menor}}{V_{Maior}} = \left(\frac{x}{8}\right)^3 \Rightarrow \frac{12\pi}{24\pi} = \frac{x^3}{512} \Rightarrow 24x^3 = 6144$

$x^3 = 256$

$x = \sqrt[3]{256}$

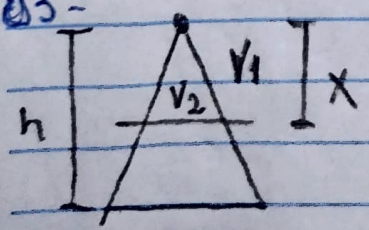
$x = 4\sqrt[3]{4} \text{ cm}$

02- $\frac{V_{Liq}}{V_{Tot}} = \left(\frac{16}{20}\right)^3 = \left(\frac{8}{10}\right)^3 = \frac{512}{1000} = 100\% = 51{,}2\%$

$V_{Liq} = 51{,}2\% \cdot V_{Tot}$ (C)

$\text{Espuma} = 100\% - 51{,}2\% = 42{,}8\% \cong 50\%$

03-



$\frac{V_2}{V_1} = \frac{1}{2}$

$\frac{1}{2} = \left(\frac{x}{h}\right)^3$ $\quad x = \frac{\sqrt[3]{h^3}}{\sqrt[3]{2}}$

$\frac{1}{2} = \frac{x^3}{h^3}$ $\quad x = \frac{h}{\sqrt[3]{2}} \cdot \frac{\sqrt[3]{2^2}}{\sqrt[3]{2^2}}$

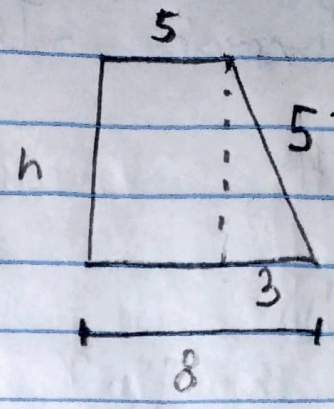
$h^3 = 2x^3$ $\quad x = \frac{h\sqrt[3]{4}}{2}$

$x^3 = \frac{h^3}{2}$

04- $h^2 = 5^2 - 3^2$

$h^2 = 25 - 9$

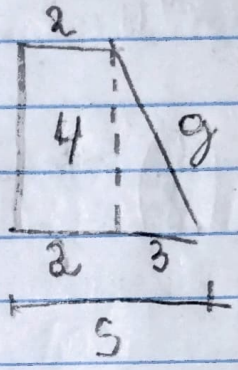
$h = \sqrt{16} = 4\,cm$



05- $g^2 = 3^2 + 4^2$

$g^2 = 9 + 16$

$g = \sqrt{25} = 5\,m$



$AT = \pi[(R^2 + r^2) + g(R+r)]$

$AT = \pi[(5^2 + 2^2) + 5(5+2)]$

$AT = \pi[(25+4) + 5.7)]$

$AT = \pi[29 + 35]$

$AT = 64\pi\ m^2$

$V = \frac{\pi h}{3}(R^2 + r^2 + R.r)$ $\quad V = \frac{156\pi}{3}$

$V = \frac{4\pi}{3}(5^2 + 2^2 + 5.2)$ $\quad V = 52\pi\ m^3$

$V = \frac{4\pi}{3}(25 + 4 + 10)$

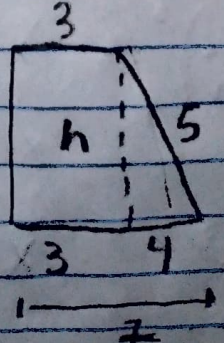
$V = \frac{4\pi}{3} \cdot 39$

06- $h^2 = 5^2 - 4^2$

$h^2 = 25 - 16$

$h = \sqrt{9} = 3$

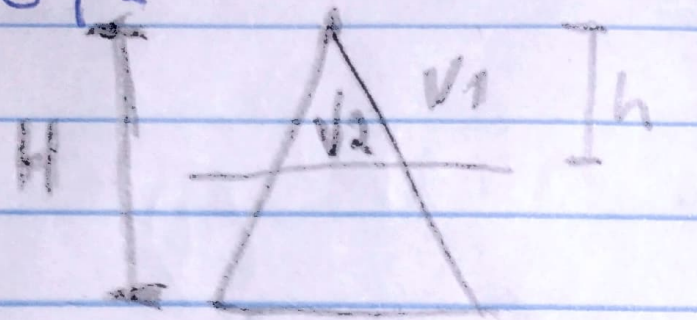
(D)



$V = \frac{3\pi}{3}(7^2 + 3^2 + 7.3)$ $\quad V = 79\pi\ cm^3$

$V = \pi(49 + 9 + 21)$

07-



$$\frac{V_2}{V_1} = \frac{1}{2}$$

(A)

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

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

$$H^3 = 2h^3$$

$$h^3 = \frac{H^3}{2}$$

$$h = \frac{\sqrt[3]{H^3}}{\sqrt[3]{2}}$$

$$h = \frac{H}{\sqrt[3]{2}} \cdot \frac{\sqrt[3]{2^2}}{\sqrt[3]{2^2}}$$

$$h = \frac{H\sqrt[3]{4}}{2}$$