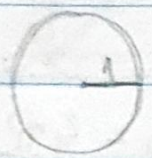
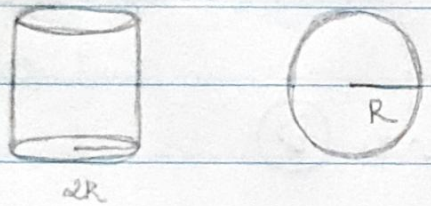
Tarefa Básica

① (A) FALSA / (B) FALSA / (C) VERDADEIRA / (D) FALSA / (E) FALSA

② 

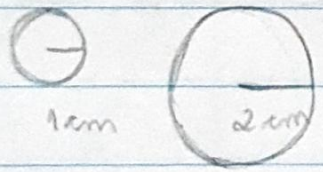
$V_I = \frac{4\pi 1^3}{3}$ ⇒ $r = 1$

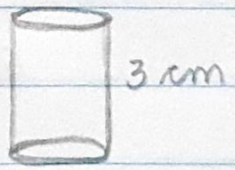
$V_{II} = \frac{4\pi \cdot 1000000}{3}$ ⇒ $r = \sqrt[3]{1000000} = 100$

③ 

$\frac{V_E}{V_C} = \frac{\frac{4\pi R^3}{3}}{\pi \cdot 4R^2 \cdot 4R} = \frac{4\pi R^3}{3\pi 4R^2 4R} = \frac{1}{12}$

Alternativa (E)

④ 



$V_I = \frac{4\pi}{3}$ $V_{II} = \frac{4\pi 8}{3} = \frac{32\pi}{3}$ $V_{III} = \pi r^2 h$

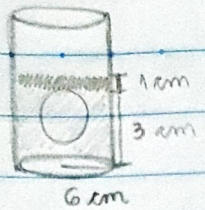
$\frac{36\pi}{3} = \pi r^2 3$

$9r^2\pi = 36\pi$

$r^2 = \frac{36}{9} \Rightarrow r^2 = 4 \Rightarrow r = 2\,cm$

Alternativa (B)

⑤



$V_I = \pi 6^2 . 3 \qquad V_{II} = \pi 36.4$

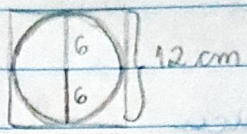
$V_I = 108\pi\ cm^3 \qquad V_{II} = 144\pi\ cm^3$

$V_E = 144\pi - 108 = 36\pi\ cm^3$

$36\pi = \frac{4\pi r^3}{3} \Rightarrow 108\pi = 4\pi r^3 \Rightarrow r^3 = 27 \Rightarrow r = 3$

Alternativa ©

⑥ $288\pi = \frac{4\pi r^3}{3}$



$864\pi = 4\pi r^3$

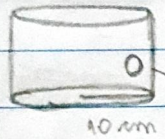
$r^3 = \frac{864\pi}{4\pi}$

$r^3 = 216$

$r = 6\ cm$

Alternativa Ⓔ

⑦



$V_P = \pi r^2 h \qquad V_D = \frac{4\pi 2^3}{3}$

$V_P = 1600\pi\ cm^3 \qquad V_D = \frac{32\pi\ cm^3}{3}$

$\frac{1600\pi}{\frac{32\pi}{3}} = \frac{4800\pi}{32\pi} = 150$

Alternativa Ⓓ

⑧

$\frac{4\pi R^3}{6} = \pi R^2 H = \frac{\pi R^2 h}{3}$

$\frac{4\pi R^3}{6} = \pi R^2 H \qquad \pi R^2 H = \frac{\pi R^2 h}{3}$

Alternativa Ⓓ

$4R^3 = 6HR^2 \qquad 3H = h$

$4R = 6H\ (\div 2)$

$2R = 3H \qquad 2R = h = 3H$

Tarefa Básica

① 

$S_E = 100\pi\ m^2 = 4\pi r^2$

$r^2 = \frac{100\pi}{4\pi}$

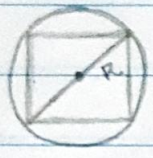
$r^2 = 25$

$r = 5m$

② 

$\frac{4\pi r^2}{6.4r^2} = \frac{4\pi r^2}{24r^2} = \frac{\pi}{6}$

Alternativa (A)

③ 

$\frac{\frac{4\pi R^3}{3}}{\left(\frac{2R\sqrt{3}}{3}\right)^3} = \frac{\frac{4\pi R^3}{3}}{\frac{8R^3 3\sqrt{3}}{27}} = \frac{108\pi R^3}{24R^3 3\sqrt{3}} = \frac{108\pi}{72\sqrt{3}} \overset{:12}{\Rightarrow}$

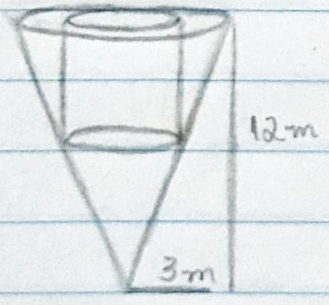
DIAGONAL = 2R

$d = l\sqrt{3}$

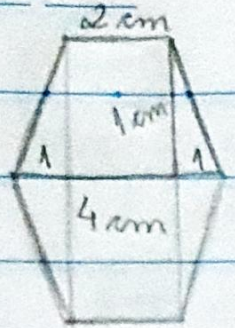
$l = \frac{2R \cdot \sqrt{3}}{\sqrt{3}\ \sqrt{3}} = \frac{2R\sqrt{3}}{3}$

$\Rightarrow \frac{9\pi}{6\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{9\sqrt{3}\pi}{18} = \frac{\sqrt{3}\pi}{2}$

Alternativa (B)

④ 

(5)



$V_{CILINDRO} = \pi . 1^2 . 2$

$V_{CILINDRO} = 2\pi$

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

$V_{CONE} = \frac{1\pi 1^2 1}{3}$

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

$V_{TOTAL} = 2\pi + \frac{2\pi}{3} \Rightarrow \frac{6\pi}{3} + \frac{2\pi}{3} = \frac{8\pi}{3}\ cm^3$