Tarefa Básica - Esferas

01 (C) porque ela é formada pelo giro de 180° de uma circunferência.

02 $V = \frac{4\pi R^3}{3}$ $V_2 = \frac{4\pi R^3}{3}$ $V_1 = \frac{4\pi \cdot 1^3}{3} = \frac{4\pi}{3}$

$V_2 = \frac{4\pi R^3}{3} = 1.000.000 \cdot \frac{4\pi}{3}$

$R^3 = 10^6$

$R = \sqrt[3]{10^6}$

$R = 10^2 = 100$ //

03 $V_{esfera} = \frac{4\pi R^3}{3}$

$V_{cilindro} = \pi r^2 \cdot h$

raio = $2r$ $\quad \pi \cdot 4r^2 \cdot 4r$

$r = 4r$ $\quad 16\pi r^3$

Razão

$x = \frac{V_{esfera}}{V_{cilindro}} = \frac{(4\pi R^3/3)}{16\pi r^3} = \frac{4/3}{16} = \frac{4}{3} \cdot 16 = \frac{4}{3} \cdot \frac{1}{16} = \frac{4}{3.16} = \frac{1}{3.4} = \frac{1}{12}$ (E)

04 $V = \left(\frac{4\pi 1^3}{3}\right) + \left(\frac{4\pi 2^3}{3}\right) =$

$V = \frac{4}{3} \cdot 1 + \frac{4\pi}{3} \cdot 8$

$V = \frac{4\pi}{3} + \frac{32\pi}{3} = 12\pi$

$12\pi = \pi r^2 \cdot 3$

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

$r^2 = 4$

$r = \sqrt{4} = 2$ // (B)

(05) $V_{cilindro} = \pi \cdot 6^2 \cdot 1 = 36\pi$

$V_{esfera} = \frac{4}{3}\pi r^3 = 36\pi$

$V_{esfera} = 4\pi r^3 = 108\pi$

$r^3 = 27$

$r = 3\,cm$ (C)

(06) $V_{esfera} = 288\pi$

$\frac{4\pi r^3}{3} = 288\pi$

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

$r = \sqrt[3]{216} = 6$

$2R = 12$

$a = 12$ (E)

(07) $V = Ab \cdot h$

$V = 10^2 \cdot \pi \cdot 16$

$V = 1600\pi\,cm^3$

$V_1 = \frac{4}{3}\pi 2^3$

$V_1 = \frac{32\pi}{3}$

$N_{doces} = \frac{V}{V_1} = \frac{1600\pi}{\left(\frac{32\pi}{3}\right)}$

$N_{doces} = \frac{4800}{32} = 150$ (D)

(08) não consegui fazer!

Tarefa Básica - Inscrição e circunscrição de sólidos

(01) não consegui fazer!

(02) $SE = 4\pi r^2$

$SE = 4\pi \cdot \frac{a^2}{4}$

$SE = \pi \cdot a^2$

$SC = 6 \cdot a^2$

Razão $\rightarrow \frac{SE}{SC} = \frac{\pi \cdot a^2}{6 \cdot a^2} = \frac{\pi}{6}$ (A)

(03) $V_{esfera} = \frac{4\pi R^3}{3}$

$a\sqrt{3} = 2R$

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

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

$V_{cilindro} = a^3$

$V_{cilindro} = \left(\frac{2\sqrt{3}R}{3}\right)^3$

$V_{cilindro} = 8 \cdot 3 \cdot \sqrt{3} \cdot R^3$

$V_{cilindro} = \frac{24\sqrt{3}R^3}{27}$

$\frac{V_e}{V_c} = \frac{\frac{4\pi R^3}{3}}{\frac{24\sqrt{3}R^2}{27}} = \frac{108\pi R^3}{72\sqrt{3}R^2} =$

$= \frac{3\pi}{2\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{3\sqrt{3}\pi}{2 \cdot 3} =$

$= \frac{\sqrt{3}\pi}{2}$ // (B)

(04) $H_{CO} = h_{CI} \rightarrow \frac{12}{6} = \frac{H-x}{x}$

$D_{CO} = D_{CI}$

$12x = 6 \cdot 12 - 6x$

$18x = 72$

$x = 4 = 2R$

$V_{CI} = 2\pi r^3$

$V_{CI} = 2\pi 2^3$

$V_{CI} = 16\pi \, cm^3$ //

(05) $V_{sol} = V_{TRO} = \frac{\pi \cdot h}{3}(R^2 + r^2 + R + r)$

$= \frac{\pi \cdot 1}{3}(2^2 + 1^2 + 2 \cdot 1)$

$= \frac{\pi \cdot 1}{3}(4 + 1 + 2) = \frac{\pi \cdot 1}{3} + 7 = \frac{8\pi}{3} \, cm^3$ //