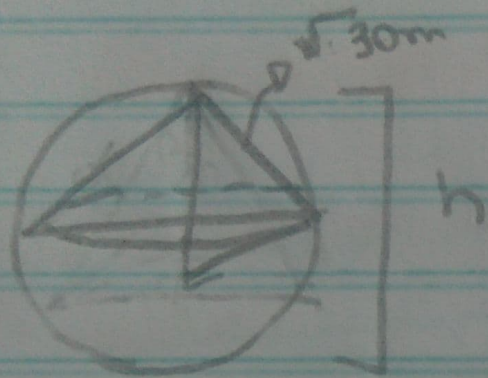


Inscrição e Circunscricção de sólidos

1.



$$A_{se} = 100\pi \text{ m}^2$$

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

$$r^2 = 100$$

$$r = \sqrt{100}$$

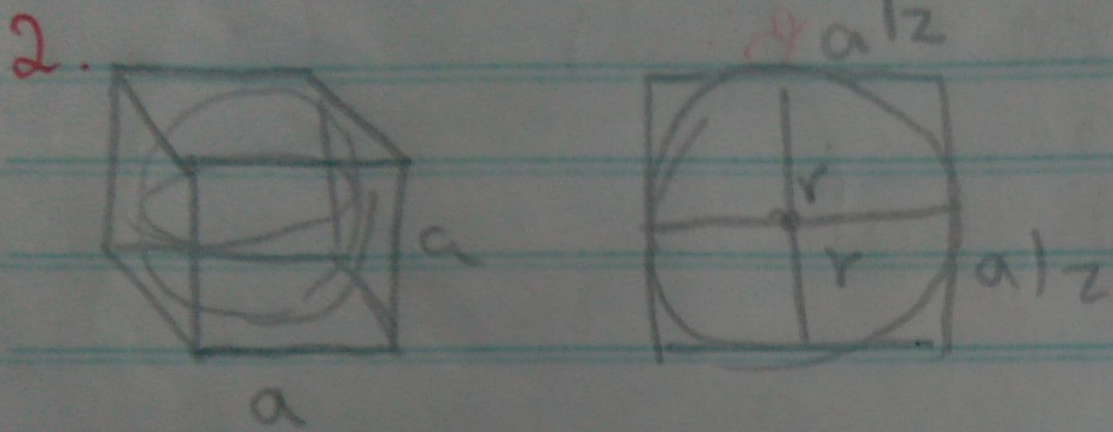
$$r = 10 \text{ m} \rightarrow \boxed{r = 5}$$

$$5^2 = r^2 + (5-h)^2$$

$$25 = r^2 + 25 - 10h + h^2$$

$$10h = 30$$

$$\boxed{h = 3 \text{ m}}$$



área da superfície do cubo
 $S_c = 6 \cdot a^2$

área da superfície do esfera
 $SE = 4\pi \cdot r^2$

medida do raio do esfera
 metade da aresta do cubo

$$SE = 4\pi \cdot \left(\frac{a}{2}\right)^2$$

$$r = \frac{a}{2}$$

Razão

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

$$\frac{SE}{S_c} = \frac{\pi \cdot a^2}{6 \cdot a^2} = \frac{\pi}{6}$$

R: a)

$$SE = \pi \cdot a^2$$

3.

$$V_E = \frac{4\pi \cdot r^3}{3} \quad | \quad V_C = a^3$$

$$V_C = \left(\frac{2\sqrt{3} \cdot r}{3} \right)^3$$

$$V_C = 8 \cdot \frac{3\sqrt{3} \cdot r^3}{27}$$

$$V_C = \frac{24\sqrt{3} r^3}{27}$$

$$4\pi R^3$$

$$V_E = \frac{4\pi R^3}{3} = 108\pi r^3$$

$$V_C = \frac{24\sqrt{3} r^3}{27} = 72\sqrt{3} r^3$$

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

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

R. 2)

$$d_0 = 2R$$

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

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

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

4. $RB = 3$ $H_{CO} = h_{C1} \rightarrow \frac{12}{6} = \frac{H}{x}$
 $H = 12$ $D_{CO} = D_{C1}$

$\frac{12}{6}x = 6 \cdot 12 = 72$

$r = 2$ $V_{C1} = 2\pi r^3$

$18x = 72$

$V_{C1} = 2\pi 2^3$

$x = 4 = \boxed{2r}$

$V_{C1} = \boxed{16\pi \text{ cm}^3}$

5.

$V_{\text{sol}} = V_{\text{tro}} = \frac{\pi \cdot b}{3} (R^2 + r^2 + R \cdot r)$

$R = 2$

$r = 1$

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

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