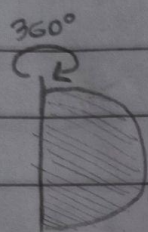
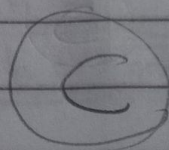
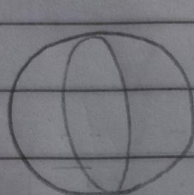


Tarefa Básica - Aula 6

1.



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Rotação de um semi-círculo em torno do diâmetro

2.

$$V_e = \frac{4\pi R^3}{3}$$

$$1000000 \cdot \frac{4\pi}{3} = \frac{4\pi R^3}{3}$$

$$V_e = \frac{4\pi}{3}$$

$$1000000 = R^3$$

$$R = \sqrt[3]{1000000} = \boxed{100}$$

100

3.

$$V_e = \frac{4\pi R^3}{3}$$

$$V_c = \pi (2R)^2 \cdot h$$

$$V_c = \pi (2R)^2 \cdot 4R$$

$$\left\{ \begin{array}{l} \frac{4\pi R^3}{3} \\ \frac{4\pi R^3}{3} \end{array} \right\} \rightarrow \frac{4\pi R^3}{\pi 4R^2 \cdot 4R} \rightarrow \frac{4R^3}{48R^3} \rightarrow \frac{4}{48} = \boxed{\frac{1}{12}}$$

1/12

4.

$$V_{e1} = \frac{4\pi 1^3}{3} = \frac{4\pi}{3} \text{ cm}^3$$

$$V_{+} = \frac{32\pi}{3} + \frac{4\pi}{3} = \frac{36\pi}{3} = 12\pi \text{ cm}^3$$

$$V_{e2} = \frac{4\pi 2^3}{3} = \frac{32\pi}{3} \text{ cm}^3$$

$$V_c = \pi r^2 \cdot h$$

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

$$r^2 = 12/3$$

$$r = \sqrt{4} = \boxed{2 \text{ cm}}$$

2

5.

$$V_c = \pi 6^2 \cdot 1$$

$$V_c = 36\pi \text{ cm}^3$$

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

$$= 3$$

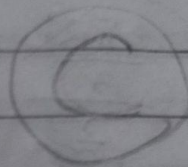
$$\frac{4\pi r^3}{3} = 36\pi$$

$$3$$

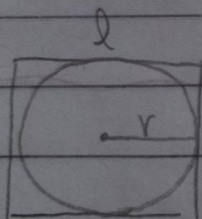
$$4\pi r^3 = 108\pi$$

$$r^3 = 27$$

$$r = \sqrt[3]{27} = 3 \text{ cm}$$



6.



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

$$3$$

$$l = 2r$$

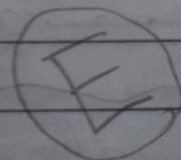
$$l = 2.6$$

$$4r^3 = 864$$

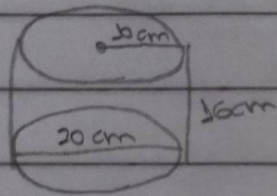
$$r^3 = 216$$

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

$$l = 12 \text{ cm}$$



7.

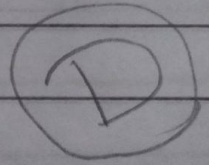


$$V_c = \pi \cdot 10^2 \cdot 16$$

$$V_c = 1600\pi$$

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

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



$$1600\pi = x \cdot \frac{32\pi}{3}$$

$$4800\pi = 32\pi x$$

$$32x = 4800$$

$$x = \frac{4800}{32}$$

$$x = 150 \text{ doces}$$

8.

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

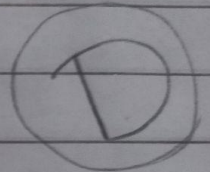
$$\frac{4\pi R}{3} = \pi H = \frac{\pi h}{3}$$

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

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

$$2R = 3H = h$$

$$2R = h = 3H$$



1.

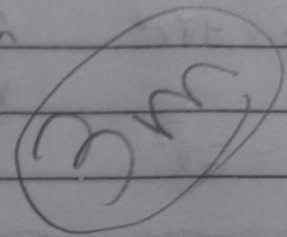
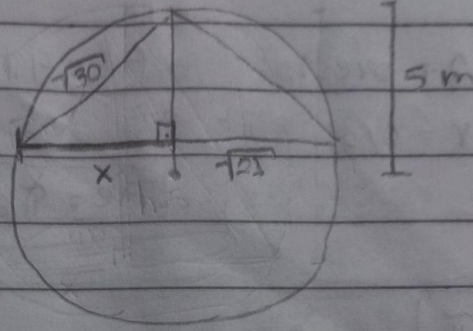
$$A_e = 4\pi r^2$$

$$300\pi = 4\pi r^2$$

$$4r^2 = 300$$

$$r = \sqrt{75}$$

$$r = 5\text{ m}$$



$$\text{geratriz} = \sqrt{30}\text{ m}$$

$$(\sqrt{30})^2 = h^2 + (\sqrt{21})^2$$

$$30 = h^2 + 21$$

$$h^2 = 9$$

$$h = \sqrt{9} = 3\text{ m}$$

$$(\sqrt{30})^2 = 3^2 + x^2$$

$$30 = 9 + x^2$$

$$x^2 = 21$$

$$x = \sqrt{21}$$

2.

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

$a \rightarrow$ aresta

$$r = a/2$$

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

$$A_c = 6l^2$$

$$A_c = 6a^2$$

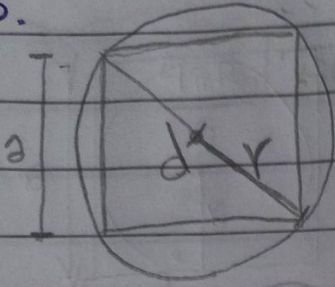
$$A_c = 6l^2$$

$$A_e = \pi a^2$$

$$\frac{A_e}{A_c} = \frac{\pi a^2}{6a^2} = \frac{\pi}{6}$$



3.



$$d_c = a\sqrt{3}$$

$$V_c = a^3$$

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

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

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

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

$$a = \frac{2r\sqrt{3}}{3}$$

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

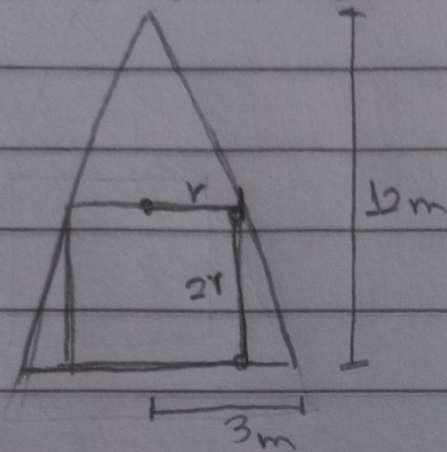
$$V_c = \frac{24r^3\sqrt{3}}{27}$$

$$\left(\frac{\frac{4\pi r^3}{3}}{\frac{24r^3\sqrt{3}}{27}} \right) \rightarrow \frac{108\pi r^3 \cdot \sqrt{3}}{72r^3\sqrt{3} \cdot \sqrt{3}} \rightarrow \frac{108\pi\sqrt{3}}{72 \cdot 3} \rightarrow \frac{108\pi\sqrt{3}}{216}$$

$$\rightarrow \frac{108\pi\sqrt{3}}{216} \rightarrow \frac{1\pi\sqrt{3}}{2} \rightarrow \frac{\sqrt{3}\pi}{2}$$

B

4.



$$V_c = \pi r^2 \cdot h$$

$$V_c = \pi r^2 \cdot (2r)$$

$$V_c = \pi 2^2 \cdot (2 \cdot 2)$$

$$V_c = 4\pi \cdot 4$$

$$V_c = 16\pi \text{ m}^3$$

$$\frac{2r}{3-r} = \frac{12}{3}$$

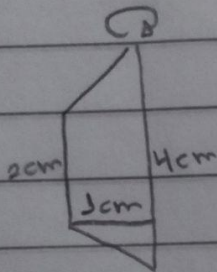
$$6r = 36 - 12r$$

$$18r = 36$$

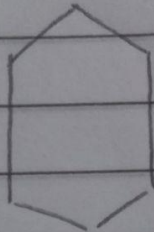
$$r = 2 \text{ m}$$

$$16\pi \text{ m}^3$$

5.

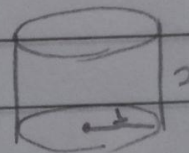


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$$2 \times \left[\frac{4-2}{2} = 1 \right]$$



$$V_{\text{cone}} = \frac{\pi 1^2 \cdot 1}{3} = \frac{\pi}{3} \Rightarrow \left| \frac{2 \cdot \pi}{3} \right|$$

$$V_t = \frac{2\pi}{3} + 2\pi$$

$$V_t = \frac{2\pi + 6\pi}{3}$$

$$V_{\text{cilindro}} = \pi 1^2 \cdot 2 = 2\pi$$

$$V_t = \frac{8\pi}{3} \text{ cm}^3$$