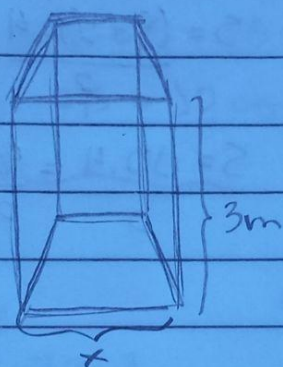


## Tarefa Básica - Aula 3

1.



$$\text{Área total} = 2x^2 + 4 \cdot 3 \cdot x$$

$$80 = 2x^2 + 12x$$

$$x^2 + 6x - 40 = 0$$

$$\frac{-10 + 4}{2} = -6$$

$$\frac{-10 - 4}{2} = -40$$

4m

$$x' = -10m$$

$$x'' = 4m$$

$$\text{Área total} = 80m^2$$

2.

Prisma hexagonal regular

$$S_{\text{hexágono}} = \frac{3L^2\sqrt{3}}{2}$$

$$\text{Área da Base} = 24\sqrt{3} \text{ cm}^2$$

$$\text{Área lateral} = 6x$$

$$\text{Altura} = 2\sqrt{3} \text{ cm}$$

$$48\sqrt{3} \text{ cm}^2$$

$$24\sqrt{3} = \frac{3L^2\sqrt{3}}{2}$$

$$24 \cdot 2 = 3L^2$$

$$L^2 = 48/3$$

$$L = \sqrt{16} = 4 \text{ cm}$$

$$x = h \cdot L$$

$$AL = 6 \cdot 8\sqrt{3}$$

$$x = 2\sqrt{3} \cdot 4$$

$$AL = 48\sqrt{3} \text{ cm}^2$$

$$x = 8\sqrt{3}$$

3.

Prisma hexagonal regular

$$\text{Altura} = \sqrt{3}$$

$$AB = \frac{3L^2\sqrt{3}}{2}$$

$$AL = 6 \cdot 2 \cdot \sqrt{3}$$

$$AL = 12\sqrt{3}$$

$$AB = \frac{3 \cdot 2^2 \sqrt{3}}{2}$$

$$AT = 12\sqrt{3} + 6\sqrt{3} \cdot 2$$

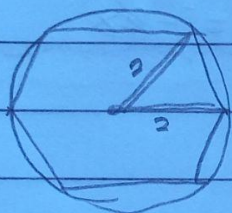
$$AB = \frac{12\sqrt{3}}{2}$$

$$AT = 12\sqrt{3} + 24\sqrt{3}$$

$$AT = 36\sqrt{3}$$

$$\text{Área total} = x$$

$$AB = 6\sqrt{3}$$

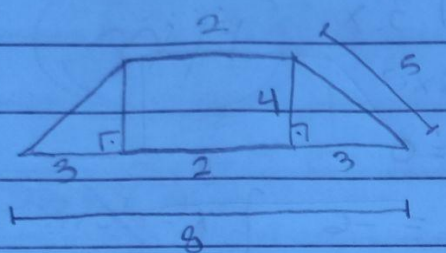


B



4.

Área do Trapézio isósceles:



$$\begin{aligned} 5^2 &= 3^2 + h^2 \\ h^2 &= 25 - 9 \\ h &= \sqrt{16} = 4 \end{aligned}$$

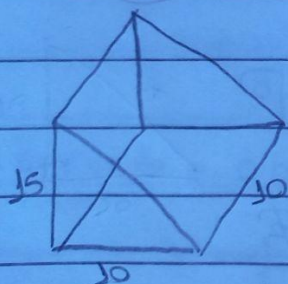
$$S = \frac{(8+2) \cdot 4}{2}$$

$$S = \frac{10 \cdot 4}{2} = \frac{40}{2} = \boxed{20 \text{ m}^2}$$

$$\text{Volume} = 20 \cdot 5 = \boxed{100 \text{ m}^3}$$

D

5.

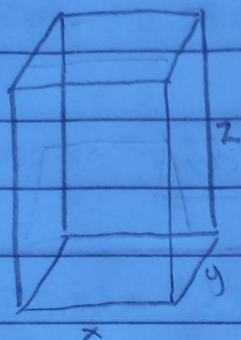


$$\text{Volume} = \frac{10 \cdot 10 \cdot 15}{3}$$

$$\text{Volume} = \frac{1500}{3} = \boxed{750 \text{ cm}^3}$$

C

6.



$$A_T = 4x^2 = 2xy + 2xz + 2yz$$

$$4x^2 = 2(xy + xz + yz)$$

$$2x^2 = xy + xz + yz$$

$$2x^2 = xy + x2y + y2y$$

$$2x^2 = 3xy + 2y^2$$

$$2y^2 + 3xy - 2x^2 = 0$$

$$A_{\text{total}} = 4x^2$$

$$z = 2y$$

$$\text{Volume} = ?$$

$$\begin{aligned} \frac{x}{2} + -2x &= \frac{-3x}{2} & \int y' &= \frac{x}{2} \\ \frac{x}{2} - -2x &= \frac{-2x^2}{2} & \int y'' &= -2x \end{aligned}$$

$$z = \frac{2 \cdot x}{2}$$

$$\boxed{z = x}$$

$$\text{Volume} = x \cdot y \cdot z$$

$$\text{Volume} = x \cdot \frac{x}{2} \cdot x$$

$$\boxed{\text{Volume} = \frac{x^3}{2}}$$

C



1.

$$53\text{cm} - 0,5 - 0,5 = 50\text{cm}$$

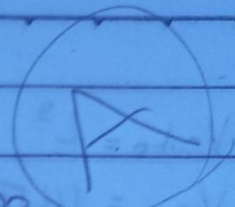
$$V = 50 \cdot 25 \cdot 10$$

$$26\text{cm} - 0,5 - 0,5 = 25\text{cm}$$

$$V = 15\,000\text{ cm}^3 \div 1\,000\,000$$

$$12,5\text{cm} - 0,5 = 12\text{cm}$$

$$V = 0,015\text{ m}^3$$



2.

Cubo:

$$\text{Área Total} = 6a^2$$

$$D = 2\sqrt{3}$$

$$A_{\text{total}} = 72\text{m}^2$$

$$6a^2 = 72$$

$$D = 2\sqrt{3} \cdot \sqrt{3}$$

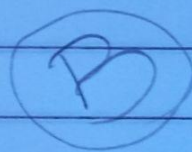
$$a^2 = 12$$

$$D = 2 \cdot 3$$

$$a = \sqrt{12}$$

$$D = 6\text{m}$$

$$a = \sqrt{2^2 \cdot 3} = 2\sqrt{3}\text{m}$$

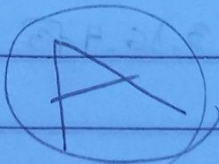


3.

$$V = 50 \cdot 50 \cdot 50$$

$$V = 125\,000\text{ cm}^3 \div 1\,000$$

$$V = 125\text{ L}$$



4.

$$V = 1 \cdot 1 \cdot 1 = 1\text{m}^3$$

$$1\text{m}^3 \cdot 1\,000 = 1\,000\text{ L}$$

$$1\,000\text{ L} = 1\text{m}$$

$$1\text{ L} = x$$

$$1\,000x = 1$$

$$x = 0,001\text{ m}$$

5.

$$V = x \cdot y \cdot z \leadsto V = 2x \cdot 2y \cdot z$$

$$V = 4 \cdot x \cdot y \cdot z$$





6.

$$V_{\text{cubo}} = L^3$$

$$V_{\text{cubo}} = Ab \cdot h$$

$$V_c = (4\sqrt{3})^3$$

$$V_c = \frac{h \cdot (L^2 \sqrt{3})}{4}$$

$$V_c = 64 \cdot 3\sqrt{3}$$

$$V_c = \underline{192\sqrt{3} \text{ cm}^3}$$

$$192\sqrt{3} = \frac{h (4\sqrt{3})^2 \sqrt{3}}{4}$$

$$192\sqrt{3} = \frac{h (16 \cdot 3\sqrt{3})}{4}$$

$$4 \cdot 192\sqrt{3} = h \cdot 48\sqrt{3}$$

$$h = 4 \cdot 4 = \underline{16 \text{ cm}}$$

$$A_{\text{prisma}} = 2Ab + AL$$

$$A_p = \frac{2((4\sqrt{3})^2 \sqrt{3})}{4} + 3 \cdot 16 \cdot 4\sqrt{3}$$

$$A_p = \frac{2(16 \cdot 3)\sqrt{3}}{4} + 192\sqrt{3}$$

$$A_p = \frac{2(48\sqrt{3})}{4} + 192\sqrt{3}$$

$$A_p = 24\sqrt{3} + 192\sqrt{3}$$

$$A_p = 216\sqrt{3}$$

$$\underline{A_p = 216\sqrt{3} \text{ cm}^2}$$

