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Sala: CTII 317

1) Duas bases: $2x^2$

Lateralis: $4 \cdot 3x = 12x$

$$2x^2 + 12x = 80$$
$$2x^2 + 12x - 80 = 0$$
$$\Delta = b^2 - 4 \cdot a \cdot c$$
$$\Delta = 12^2 - 4 \cdot 2 \cdot (-80)$$
$$\Delta = 144 + 640$$
$$\Delta = 784$$
$$x = \frac{-b \pm \sqrt{\Delta}}{2 \cdot a}$$
$$\frac{-12 \pm \sqrt{784}}{2 \cdot 2}$$
$$\frac{-12 \pm 28}{4}$$
$$x_1 = \frac{-12 + 28}{4} = \frac{16}{4} = 4$$
$$x_2 = \frac{-12 - 28}{4} = \frac{-40}{4} = -10$$

$x = 4 \text{ cm}$

$$2) \quad A_{\text{later.}} = 24\sqrt{3} \cdot 2\sqrt{3} \cdot 6$$

$$A_{\text{later.}} = 288\sqrt{3}$$

$$A_{\text{later}} = \frac{288\sqrt{3}}{6} = 48\sqrt{3} \text{ cm}^2$$

$$3) \quad A_{\text{lr}} = \frac{6^2 \cdot 2^2 \sqrt{3}}{4 \cdot 2}$$

$$A_{\text{lr}} = 3 \cdot \frac{2^2 \sqrt{3}}{2}$$

$$A_{\text{lr}} = 3 \cdot \frac{4\sqrt{3}}{2} = 2$$

$$A_{\text{lr}} = 3 \cdot 2\sqrt{3}$$

$$A_{\text{lr}} = 6\sqrt{3}$$

$$A_{\text{later}} = 6 \cdot 2 \cdot \sqrt{3}$$

$$A_{\text{later}} = 12\sqrt{3}$$

$$A_{\text{Tot}} = 12\sqrt{3} + 2 \cdot 6 \cdot \sqrt{3}$$

$$A_{\text{Tot}} = 12\sqrt{3} + 12\sqrt{3}$$

$$A_{\text{Total}} = 24\sqrt{3} \text{ letra B}$$

4) $a \rightarrow$ cateto do triângulo retângulo

$$a + 2 + a = 8$$

$$2a = 8 - 2$$

$$a = \frac{8-2}{2} = \frac{6}{2} = 3$$

$$5^2 = h^2 + a^2$$

$$25 = h^2 + 3^2$$

$$25 = h^2 + 9$$

$$h^2 = 25 - 9$$

$$h^2 = 16$$

$$h = \sqrt{16}$$

$$h = 4$$

$$A = \frac{(B+b) \cdot h}{2}$$

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

$$A = \frac{10 \cdot 4}{2}$$

$$A = \frac{40}{2} = 20$$

$$V = 20 \cdot 5$$

$$V = 100 \text{ letra D}$$

$$\begin{aligned}
 5) \text{ hipotenusa: } a^2 &= b^2 + c^2 \\
 a^2 &= 15^2 + 10^2 \\
 a^2 &= 225 + 100 \\
 a^2 &= 325 \\
 a &= \sqrt{325} \\
 a &= 5\sqrt{13}
 \end{aligned}$$

$$A_{lr} = \frac{10 \cdot 15}{2} = \frac{150}{2} = 75 \text{ cm}^2$$

$$A_{\text{tot}} = 2 \cdot A_{lr} + A_{\text{later}} = 2 \cdot (75) + (10 \cdot 10) \cdot (15 \cdot 10) + (5\sqrt{13}) \cdot (10)$$

$$A_{\text{tot}} = 50(303 + \sqrt{13})$$

$$V = 75 \cdot 10 = 750 \text{ cm}^3 \text{ letra C}$$

Parte 2

$$1) \text{ Comprimento: } 51 - 2 \cdot 0,5 = 51 - 1 = 50 \text{ cm}$$

$$\text{Largura: } 26 - 2 \cdot 0,5 = 26 - 1 = 25 \text{ cm}$$

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

$$\begin{aligned}
 &0,50 \text{ m} \cdot 0,25 \text{ m} \cdot 0,12 \text{ m} \\
 V &= (0,50 \cdot 0,25 \cdot 0,12) = 0,015 \text{ letra A}
 \end{aligned}$$

$$\begin{aligned}
 2) \quad A_{\text{tot}} &= 6 \cdot x^2 & \rightarrow d &= x \cdot \sqrt{3} \\
 72 &= 6 \cdot x^2 & d &= 2\sqrt{3} \cdot \sqrt{3} \\
 x^2 &= 12 & d &= 2 \cdot 3 \\
 x &= \sqrt{12} & d &= 6 \text{ m litra B} \\
 x &= 2\sqrt{3}
 \end{aligned}$$

$$3) \quad a = \frac{5}{10} = 0,5 \text{ m}$$

$$V = 0,5^3$$

$$V = 0,125 \text{ m}^3$$

$$V = 0,125 \cdot 1000$$

$$V = 1,25 \text{ litra A}$$

$$4) \quad 1^3 = 1 \text{ m}^3$$

$$V = 1000 - 1 = 999 \text{ L}$$

$$\begin{array}{cc}
 1 \text{ m} & 1 \text{ L} \\
 (1-x) & 999 \text{ L}
 \end{array}$$

$$1000(1-x) = 999 \rightarrow x = 0,001 \text{ m}$$

$$1000x = 999 - 1000$$

$$1000x = -1$$

$$x = \frac{-1}{1000}$$

$$6) V_c = l^3$$

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

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

$$V_c = 192\sqrt{3}$$

$$V_c = A \cdot l_r \cdot h$$

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

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

$$192\sqrt{3} = \frac{[16 \cdot 3\sqrt{3}] \cdot h}{4}$$

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

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

$$h = 4 \cdot 4$$

$$h = 16$$

$$A_p = 2 \cdot A \cdot l_r + A \cdot l$$

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

$$A_p = \frac{2 \cdot [16 \cdot 3 \cdot \sqrt{3}]}{4 + 192\sqrt{3}}$$

$$A_p = \frac{2 \cdot [48\sqrt{3}]}{4 + 192\sqrt{3}}$$

$$A_p = 2 \cdot 12\sqrt{3} + 192\sqrt{3}$$

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

$$\rightarrow A_p = 216\sqrt{3} \text{ cm}^2 \text{ letra D}$$