Turma: CT11348

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Tarefa Básica - Prismas

1- 

$Area\ Total = 80 = 2x^2 + 4(3 \cdot x) = 2x^2 + 12x$

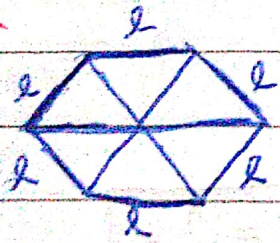
$2x^2 + 12x - 80 = 0$

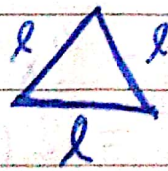
$x^2 + 6x - 40 = 0$ $\quad x = -10$ Não convém

$-10 + 4 = -6$

$-10 \cdot 4 = -40$

$x = 4$ ✓

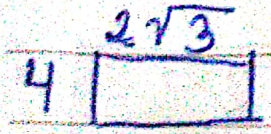
2- 

$S = 24\sqrt{3}\ cm^2$ 

$\frac{24\sqrt{3}}{6} = 4\sqrt{3}\ cm^2$

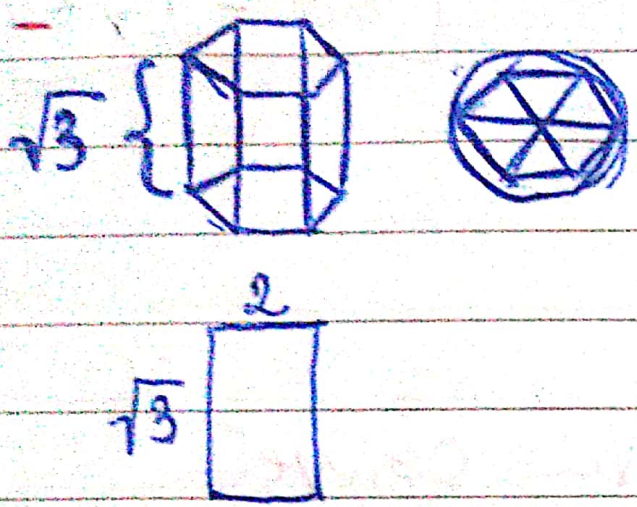
Área triângulo equilátero $= \frac{\ell^2\sqrt{3}}{4} = 4\sqrt{3} \rightarrow \ell^2 = 16$

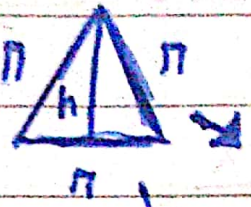
$\ell = \sqrt{16} = 4\ cm$



$A_L = 6(4 \cdot 2\sqrt{3}) = 48\sqrt{3}\ cm^2$

3 -





$\ell = n = 2$

$n^2 = h^2 + (n/2)^2$

$h^2 = 4 - 1 = 3$ → $h = \sqrt{3}$ cm

$S_\Delta = 2 \cdot \sqrt{3}/2 = \sqrt{3}$ cm²

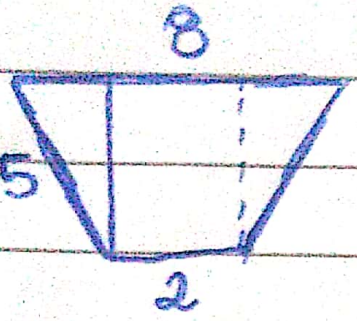
$S_{hexagono} = 6 \cdot S_\Delta = 6\sqrt{3}$ cm²

$Area\ Total = 2(6\sqrt{3}) + 6(2 \cdot \sqrt{3}) = 12\sqrt{3} + 12\sqrt{3}$

$= 24\sqrt{3}$ cm²

(B)

4 -



$S = (8+2) \cdot h / 2$

$S = (10) \cdot 2 = 20\ m^2$

$h^2 = 5^2 - 3^2 = 16$

$h = \sqrt{16} = 4\ m$

$V = 20 \cdot 5 = 100\ m^3$ (D)

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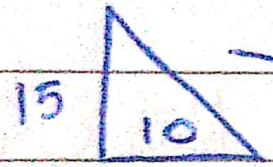
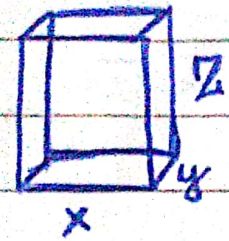
5 -



$S_{base} = \frac{15 \cdot 10}{2} = 75\ cm^2$

$V = base \cdot h = 75 \cdot 10 = 750\ cm^3$ (C)

6 -



$$\text{Área total} = 4x^2 = 2xy + 2xz + 2yz$$

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

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

$$z = 2y$$

$$2x^2 = xy + x \cdot 2y + y \cdot 2y$$

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

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

$a = 2$
$b = 3x$
$c = -2x^2$

$$\Delta = (3x)^2 - 4 \cdot 2 \cdot -2x^2 = 9x^2 + 16x^2 = 25x^2$$

$$y = \frac{-3x \pm \sqrt{25x^2}}{2 \cdot 2} = \frac{-3x \pm 5x}{4}$$

$$y = \frac{2x}{4} = \frac{x}{2} \quad \text{ou} \quad y = \frac{-8x}{4} = -2x \rightarrow \text{Não convém}$$

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

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

$$V = x \cdot \frac{x}{2} \cdot x = \frac{x^3}{2} \quad \text{(C)}$$

Tarefa Básica - Paralelepípedos e Cubos

1- $V = (51 - 2 \cdot 0{,}5) \cdot (26 - 2 \cdot 0{,}5) \cdot (12{,}5 - 0{,}5)$

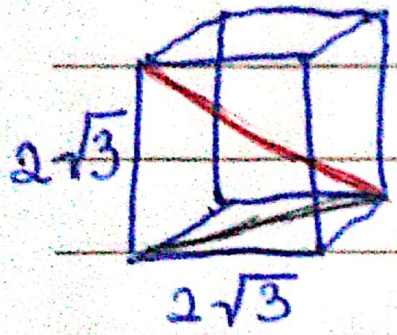
$V = 50 \cdot 25 \cdot 12 = 600 \cdot 25 = 15.000\ cm^3$

$V = \underline{0{,}015\ m^3}$ // (A)

2- Área total $= 6\ell^2 = 72$

$\ell^2 = 72/6 = 12$ → $\ell = \sqrt{12}$

$\ell = 2\sqrt{3}$



$D = \ell\sqrt{3} = 2\sqrt{3} \cdot \sqrt{3} = 2 \cdot 3 = 6\ m$ (B)

3- $V = 5^3 = 25 \cdot 5 = \underline{125}$ // (A)

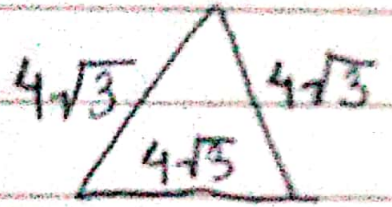
4- $V = \ell^3 = 1_m^3 = 1000\ L$ → $\frac{1\ L}{1000\ L} = 0{,}001\ m$

5- $a \cdot b \cdot c = V$

$2a \cdot 2b \cdot c = x$

$x = \frac{4a \cdot b \cdot c \cdot V}{a \cdot b \cdot c} = 4V$ (C)

6-



$S_\Delta = \frac{(4\sqrt{3})^2\sqrt{3}}{4} = 4 \cdot 3\sqrt{3} = 12\sqrt{3}$

$V_{cubo} = (4\sqrt{3})^3 = 48 \cdot 4\sqrt{3} = 192\sqrt{3}$

$V_\Delta = 192\sqrt{3} = 12\sqrt{3} \cdot h \rightarrow h = \frac{192\sqrt{3}}{12\sqrt{3}} = 16\ cm$

$A_{total} = 2(12\sqrt{3}) + 3(16 \cdot 4\sqrt{3})$

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

$= 216\sqrt{3}\ cm^2$ (D)