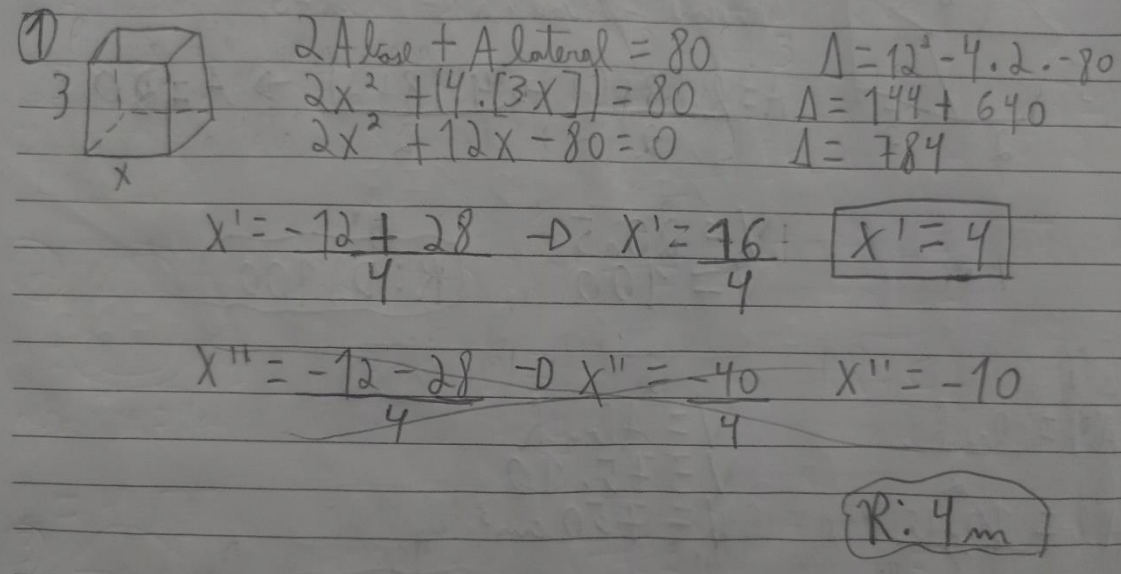
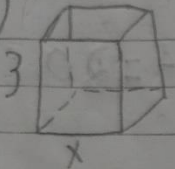


### Prismas e Paralelepípedo:

Prismas:

1.



① 

$$2A_{\text{base}} + A_{\text{lateral}} = 80$$

$$2x^2 + (4 \cdot [3x]) = 80$$

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

$$\Delta = 12^2 - 4 \cdot 2 \cdot -80$$

$$\Delta = 144 + 640$$

$$\Delta = 784$$

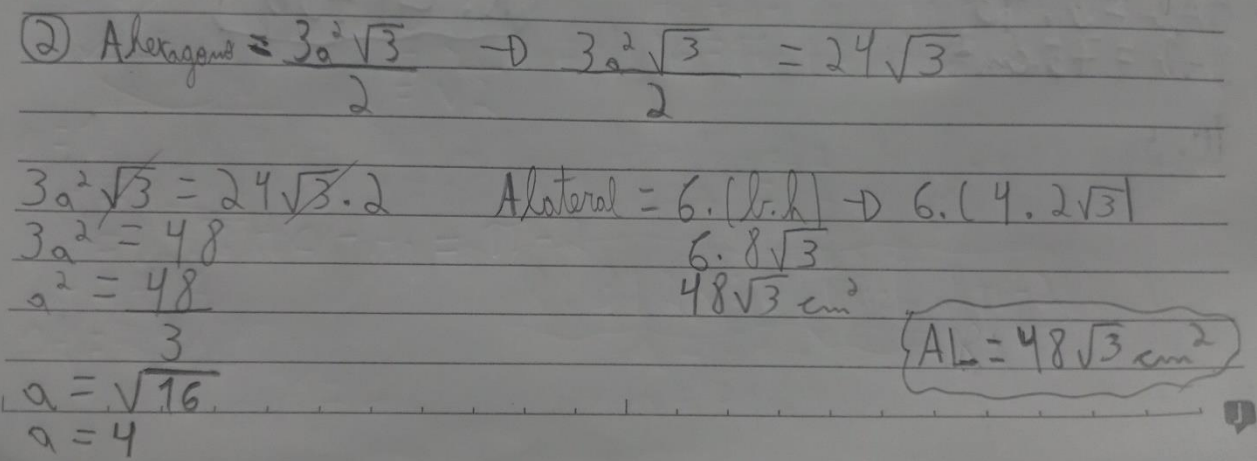
$$x' = \frac{-12 \pm 28}{4} \rightarrow x' = \frac{16}{4} \quad \boxed{x' = 4}$$

$$x'' = \frac{-12 - 28}{4} \rightarrow x'' = \frac{-40}{4} \quad x'' = -10$$

R: 4m

R: 4m

2.



②  $A_{\text{hexágono}} = \frac{3a^2\sqrt{3}}{2} \rightarrow \frac{3a^2\sqrt{3}}{2} = 24\sqrt{3}$

$$\frac{3a^2\sqrt{3}}{2} = 24\sqrt{3} \cdot 2$$

$$3a^2 = 48$$

$$a^2 = 48$$

$$a = \sqrt{48}$$

$$a = 4\sqrt{3}$$

$$A_{\text{lateral}} = 6 \cdot (l \cdot h) \rightarrow 6 \cdot (4 \cdot 2\sqrt{3})$$

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

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

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

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

3.

③ 2.  $A_{\text{base}} + A_{\text{lateral}}$

$$A_{\text{base}} = \frac{3 \cdot 2^2 \sqrt{3}}{2} \rightarrow \frac{3 \cdot 2^2 \sqrt{3}}{2} \rightarrow \frac{12\sqrt{3}}{2} = 6\sqrt{3}$$

$$A_{\text{lateral}} = 6 \cdot (b \cdot h) \rightarrow 6 \cdot (2\sqrt{3}) = 12\sqrt{3}$$

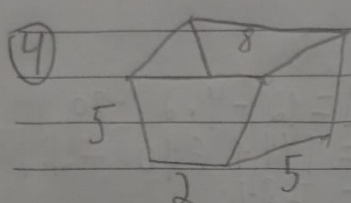
$$\rightarrow 2 \cdot 6\sqrt{3} + 12\sqrt{3} \rightarrow 24\sqrt{3}$$

R: B)  $24\sqrt{3}$

R: b)  $24\sqrt{3}$

4.

④



Volume =  $A_{\text{base}} \cdot h$        $h = 5$

$$A = \frac{h \cdot (B + b)}{2} \rightarrow \frac{4 \cdot (8 + 2)}{2} \rightarrow A = 20$$

$$V = 20 \cdot 5$$

$$V = 100$$

R: D) 100

R: d) 100

5.

⑤  $A_{\text{b}} = \frac{b \cdot h}{2}$        $V = A_{\text{b}} \cdot h$

$$A_{\text{b}} = \frac{16 \cdot 15}{2}$$

$$V = 75 \cdot 10$$

$$V = 750 \text{ cm}^3$$

$$A_{\text{b}} = 5 \cdot 15$$

$$A_{\text{b}} = 75 \text{ cm}^2$$

R: C) 750

R: c) 750

6.

Handwritten solution for problem 6:

$$\textcircled{6} \quad Ax = 2xy + 2xz + 2yz \quad Z = 2y$$

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

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

$$2x^2 = xy + x(2y) + y(2y)$$

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

$$y = \frac{x}{2} \quad Z = X$$

$$V = x \cdot y \cdot z \quad V = \frac{x^3}{2}$$

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

**R: C)  $\frac{x^3}{2}$**

R: c)  $\frac{x^3}{2}$

Paralelepípedos e Cubos:

1.

Handwritten solution for problem 1:

$$\textcircled{1} \quad 51 - (2 \cdot 0,5) = 50 \text{ cm}$$

$$26 - (2 \cdot 0,5) = 25 \text{ cm}$$

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

$$\text{Volume interno} = 50 \cdot 25 \cdot 12 = 1250 \cdot 12$$

$$\frac{15000}{1000000} \rightarrow \frac{15}{1000} = 0,015 \text{ m}^3$$

**R: A) 0,015**

R: a) 0,015

2.

$$\begin{aligned}
 \textcircled{2} \quad A_{\text{total}} &= 2(a \cdot a + a \cdot a + a \cdot a) & \Delta &= a\sqrt{3} \\
 72 &= 6a^2 & \Delta &= 2\sqrt{3} \cdot \sqrt{3} \\
 a^2 &= \frac{72}{6} & \Delta &= 2 \cdot 3 \\
 & & \Delta &= 6
 \end{aligned}$$

$\boxed{\text{R: B) 6}}$

R: b) 6

3.

$$\begin{aligned}
 \textcircled{3} \quad \text{Volume} &= 50 \cdot 50 \cdot 50 = 50^3 = 125000 \text{ cm}^3 & 1 \text{ cm}^3 &= 1 \text{ mL} \\
 & & 1 \text{ L} &= 1000 \text{ mL} \\
 & & 1 \text{ L} &= 1000 \text{ cm}^3 \\
 1 \text{ L} \times \frac{1000 \text{ cm}^3}{1000 \text{ cm}^3} & & 125000 &= 1000x \\
 x & & x &= \frac{125000}{1000} \\
 & & x &= 125 \text{ L}
 \end{aligned}$$

$\boxed{\text{R: A) 125}}$

R: a) 125

4.

$$\begin{aligned}
 \textcircled{4} \quad V &= 1^3 - 1 \text{ m}^3 - 1 \text{ l} & 1 \text{ l} &= 1 \text{ dm}^3 & 1000 \text{ l} - 1 \text{ l} \\
 & & 1 \text{ m}^3 &= 1000 \text{ dm}^3 & = \\
 & & 1 \text{ m}^3 &= 1000 \text{ l} & 999 \text{ l} \\
 & & 1 \text{ l} &= 0,001 \text{ m}^3 & \\
 \\ 
 \frac{1 \text{ m}^3 \times 1000 \text{ l}}{(1-x) \times 999 \text{ l}} & & 1000(1-x) &= 999 & \\
 & & 1000 - 1000x &= 999 & \\
 & & -1000x &= 999 - 1000 & \\
 & & x &= \frac{-1}{-1000} & x = 0,001 \text{ m} \\
 & & & & \text{R: } 0,001 \text{ m}
 \end{aligned}$$

R: 0,001m

5.

$$\begin{aligned}
 \textcircled{5} \quad V &= A_{\text{base}} \cdot h & A_{\text{base}} &= a \cdot b & V &= 4 \text{ ab} \cdot h \\
 V &= a \cdot b \cdot x & A_{\text{base}} &= 2a \cdot 2b & 4V &= 4 \text{ ab} \cdot h \\
 & & A_{\text{base}} &= 4 \text{ ab} & & \\
 & & & & \text{R: } 4 \text{ V}
 \end{aligned}$$

R: c) 4V

6.

$$\begin{aligned}
 \textcircled{6} \text{ Área da base} &= \frac{l^2 \sqrt{3}}{4} = \frac{(4\sqrt{3})^2 \cdot \sqrt{3}}{4} = \frac{4^2 \cdot \sqrt{3}^2 \cdot \sqrt{3}}{4} = \frac{16 \cdot 3\sqrt{3}}{4} \\
 &= 4 \cdot 3\sqrt{3} = 12\sqrt{3} \\
 \text{Volume do cubo} &= (4\sqrt{3})^3 = 192\sqrt{3} \\
 \text{Volume do prisma} &= \text{Área} \cdot h \\
 192\sqrt{3} &= 12\sqrt{3} \cdot h \\
 h &= \frac{192\sqrt{3}}{12\sqrt{3}} \quad h = 16 \\
 A_{\text{lateral}} &= 3 \cdot (4\sqrt{3} \cdot 16) \\
 A_{\text{lateral}} &= 48 \cdot 4\sqrt{3} \\
 A_{\text{lateral}} &= 192\sqrt{3} \\
 A_{\text{total}} &= 2A_{\text{base}} + A_{\text{lateral}} \\
 A_{\text{total}} &= 2 \cdot 12\sqrt{3} + 192\sqrt{3} \\
 A_{\text{total}} &= 24\sqrt{3} + 192\sqrt{3} \\
 A_{\text{total}} &= (24 + 192)\sqrt{3} \\
 A_{\text{total}} &= 216\sqrt{3} \\
 \text{R: d) } &216\sqrt{3}
 \end{aligned}$$

R: d)  $216\sqrt{3}$