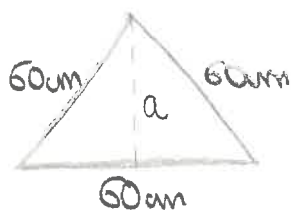


CUERPOS GEOMÉTRICOS

11

PRISMAS:

1. Octaedro regular $\Rightarrow$ 8 caras que son triángulos equiláteros



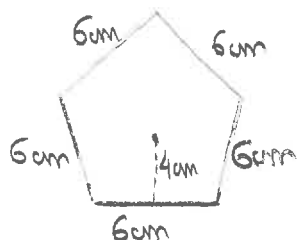
$$60^2 = 30^2 + a^2$$

$$a^2 = 60^2 - 30^2$$

$$a^2 = 2700 \Rightarrow a = \sqrt{2700} \Rightarrow a = 51.96 \text{ cm}$$

$$A_{\text{octaedro}} = 8 \cdot \frac{b \cdot a}{2} = \frac{8 \cdot 60 \cdot 51.96}{2} \Rightarrow \underline{A_{\text{octaedro}} = 12470.4 \text{ cm}^2}$$

2. Dodecaedro regular $\Rightarrow$ 12 caras que son pentágonos regulares



$$A_{\text{pentágono}} = \frac{P \cdot a_p}{2} = \frac{6 \cdot 5 \cdot 4}{2} = 60 \text{ cm}^2$$

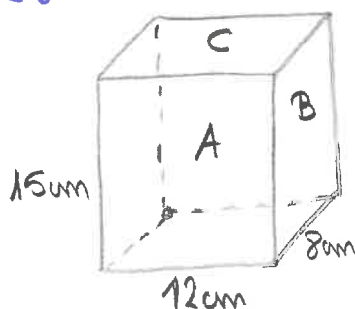
$$A_{\text{dodecaedro}} = 12 \cdot 60 \Rightarrow \underline{A_{\text{dodecaedro}} = 720 \text{ cm}^2}$$

3. Cubo $\Rightarrow$ 6 caras que son cuadrados

$$A_{\text{cuadr}} = l^2 = 10^2 = 100 \text{ cm}^2$$

$$A_{\text{cubo}} = 6 \cdot 100 \Rightarrow \underline{A_{\text{cubo}} = 600 \text{ cm}^2}$$

4.



$$A_A = b \cdot a = 12 \cdot 15 = 180 \text{ cm}^2$$

$$A_B = b \cdot a = 8 \cdot 15 = 120 \text{ cm}^2$$

$$A_C = b \cdot a = 12 \cdot 8 = 96 \text{ cm}^2$$

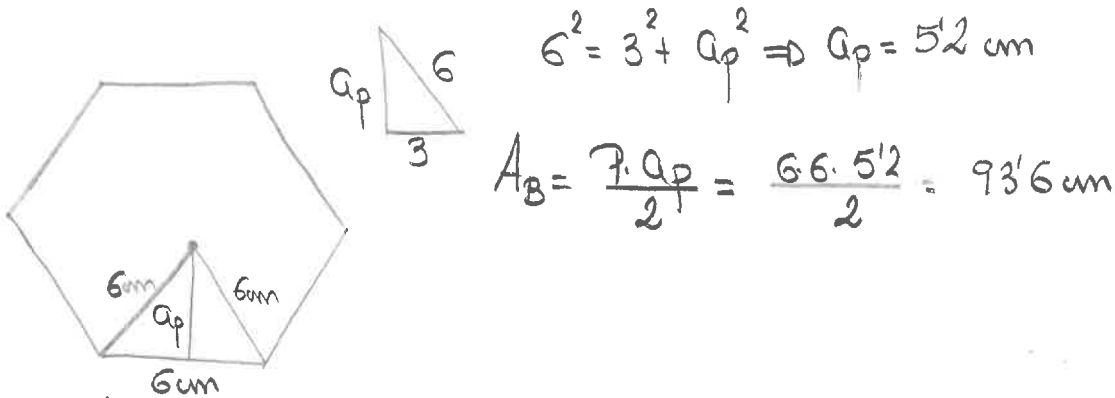
$$A_{\text{ortoaedro}} = 2 \cdot A_A + 2 \cdot A_B + 2 \cdot A_C$$

$$A_{\text{ortoaedro}} = 2 \cdot 180 + 2 \cdot 120 + 2 \cdot 96$$

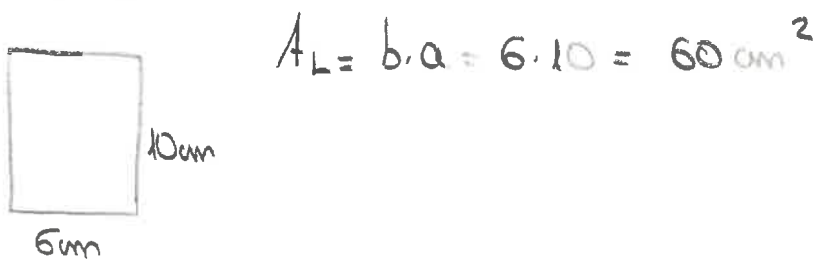
$$\underline{A_{\text{ortoaedro}} = 792 \text{ cm}^2}$$

5. Prisma hexagonal $\Rightarrow$ $\begin{cases} 2 \text{ bases que son hexágonos} \\ 6 \text{ caras laterales que son rectángulos} \end{cases}$

. Área Base:



. Área lateral:

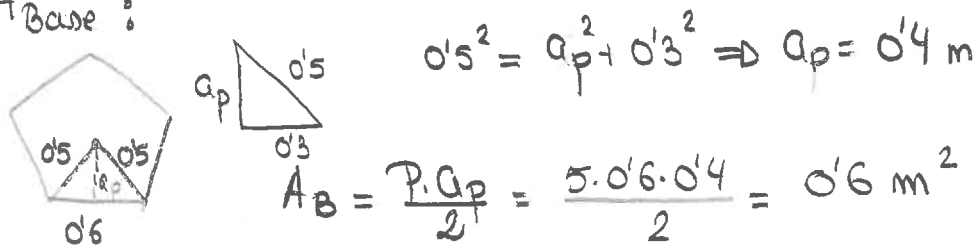


$$A_{\text{prisma}} = 2 \cdot A_B + 6 \cdot A_L \Rightarrow A_p = 2 \cdot 93.6 + 6 \cdot 60 \Rightarrow \underline{A_p = 547.2 \text{ cm}^2}$$

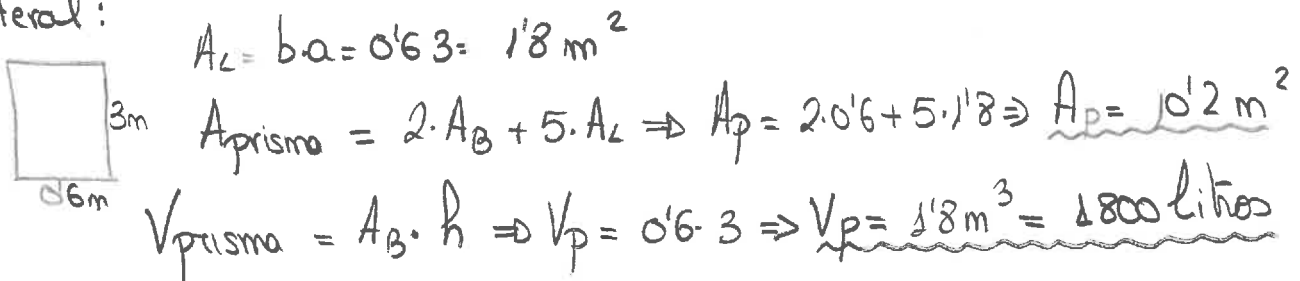
$$V_{\text{prisma}} = A_B \cdot h \Rightarrow V_{\text{prisma}} = 93.6 \cdot 10 \Rightarrow \underline{V_p = 936 \text{ cm}^3}$$

8. Prisma pentagonal $\begin{cases} 2 \text{ bases que son pentágonos} \\ 5 \text{ caras laterales que son rectángulos} \end{cases}$

. Área Base:



. Área lateral:



$$A_{\text{prisma}} = 2 \cdot A_B + 5 \cdot A_L \Rightarrow A_p = 2 \cdot 0.6 + 5 \cdot 1.8 \Rightarrow \underline{A_p = 10.2 \text{ m}^2}$$

$$V_{\text{prisma}} = A_B \cdot h \Rightarrow V_p = 0.6 \cdot 3 \Rightarrow \underline{V_p = 1.8 \text{ m}^3 = 1800 \text{ litros}}$$

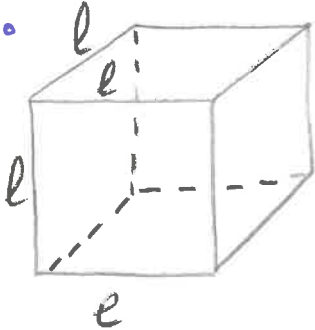
12.

$$V = 30\ell = 30\text{ dm}^3 = 30.000\text{ cm}^3$$

$$V_p = A_B \cdot h$$

$$30.000 = 60 \cdot h \Rightarrow h = \frac{30.000}{60} \Rightarrow h = 500\text{ cm} \Rightarrow \underline{h = 5\text{ m}}$$

14.



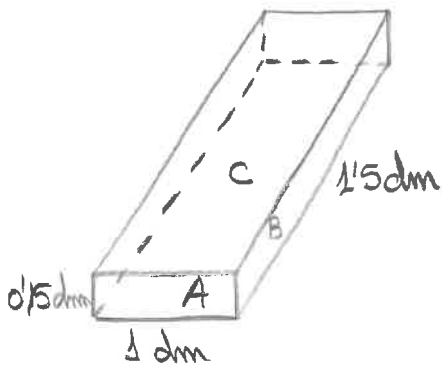
$$V = A_B \cdot h \Rightarrow V = l \cdot l \cdot l \Rightarrow V = l^3$$

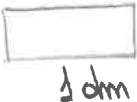
$$27\ell = 27\text{ dm}^3 = 27.000\text{ cm}^3$$

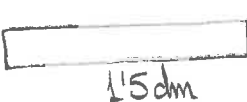
$$27.000 = l^3 \Rightarrow l = \sqrt[3]{27.000} \Rightarrow l = 30\text{ cm}$$

$$A_T = 6 \cdot l^2 \Rightarrow A_T = 6 \cdot 30^2 \Rightarrow \underline{A_T = 5400\text{ cm}^2 = 54\text{ dm}^2 = 0'54\text{ m}^2}$$

16.



A:  $A_A = b \cdot a = 1 \cdot 0'5 = 0'5\text{ dm}^2$

B:  $A_B = b \cdot a = 1'5 \cdot 0'5 = 0'225\text{ dm}^2$

C:  $A_C = b \cdot a = 1 \cdot 1'5 = 1'5\text{ dm}^2$

$$A_T = 2 \cdot A_A + 2 \cdot A_B + 2 \cdot A_C \Rightarrow A_T = 2 \cdot 0'5 + 2 \cdot 0'225 + 2 \cdot 1'5 \Rightarrow A_T = 3'75\text{ dm}^2$$

Hay 20 tablas: $A_{\text{TOTAL}} = 20 \cdot A_T \Rightarrow A_{\text{TOTAL}} = 20 \cdot 3'75 \Rightarrow A_{\text{TOTAL}} = 75\text{ dm}^2$

Precio: $75 \cdot 2'5 = 187'5$

Costo: 187'5 €

