# PRISMAS

1. $A_B = 80m^2$ | Altura = 3m | Lado = ?

$At = 2AB + AL$

$80 = 2l^2 + (4.3.l)$

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

$\Delta = b^2 - 4.a.c$

$\Delta = 12^2 - 4.2.(-80)$

$\Delta = 784$

$l = \frac{-b \pm \sqrt{784}}{2.a} = \frac{l = -12 \pm 28}{4}$

$l_1 = \frac{-12+28}{4} = \frac{16}{4}$ → $l = 4m$

$l_2 = \frac{-12-28}{4} = \frac{-40}{4} = -10$ (X)

2. $A_B = 24\sqrt{3}\ cm^2$ | Altura = $2\sqrt{3}$ cm | $A_L$ = ?

PRISMA Hexagonal Regular:

$AB = \frac{6l^2\sqrt{3}}{4}$

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

$96 = 6l^2$

$l^2 = \frac{96}{6}$

$l = \sqrt{16}$

$l = 4cm$

$A_L = 6.4.2\sqrt{3}$

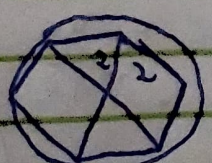
$A_L = 24.2\sqrt{3}$

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

3. Altura = $\sqrt{3}$

$n = 2 = l$

$At = ?$



PRISMA reto Hexagonal:

$AB = \frac{6.l^2\sqrt{3}}{4}$

$AB = 6\sqrt{3}$

$AL = 6.2.\sqrt{3}$

$AL = 12\sqrt{3}$.

$At = 2AB + AL$

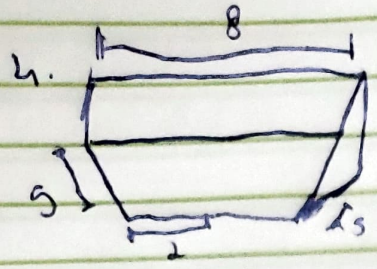
$At = 2.6\sqrt{3} + 12\sqrt{3}$

$At = 12\sqrt{3} + 12\sqrt{3}$

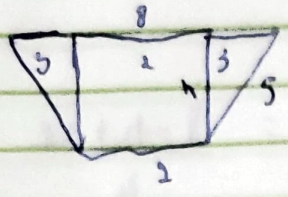
$At = 24\sqrt{3}$

ALTERNATIVA B

4.




$B = 8$
$b = 2$
$V = ?$




$\rightarrow 5^2 = 3^2 + h^2$
$25 = 9 + h^2$
$h^2 = 25 - 9$
$h = \sqrt{16}$
$h = 4$

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

$AB = \frac{10 \cdot 2}{2}$

$AB = 20$

$V = AB \cdot 5$
$V = 20 \cdot 5$
$V = 100 m^3$

Alternativa D

5. $V = AB \cdot h$
$V = AD \cdot 10$
$V = \frac{15 \cdot 10}{2} \cdot 10$

$\rightarrow V = 150 \cdot 5$
$V = 750 cm^3$

Alternativa C

6. Altura $z = 2y$; $At = 4x^2$ / Prisma quadrangular reto $AB = x \cdot y$

$AL = 2 \cdot (x \cdot 2y) + 2(y \cdot 2y)$
$AL = 4xy + 4y^2$

$At = 2 \cdot AB + AL$
$4x^2 = 2xy + (4xy + 4y^2)$
$4x^2 = 6xy + 4y^2$
$4x^2 - 6xy - 4y^2 = 0$

$\Delta = (6y)^2 - 4 \cdot 4 \cdot (-4y^2)$
$\Delta = 36y^2 + 64y^2$
$\Delta = 100y^2$

$x = \frac{-(-6y) \pm \sqrt{100y^2}}{2 \cdot 4}$

$x = \frac{6y \pm 10y}{8}$

$x1 = \frac{6y + 10y}{8} = \frac{16y}{8} \Rightarrow 2y$

$x2 = \frac{6y - 10y}{8} = \frac{-4y}{8}$ não convem

$x = 2y$
$y = \frac{x}{2}$

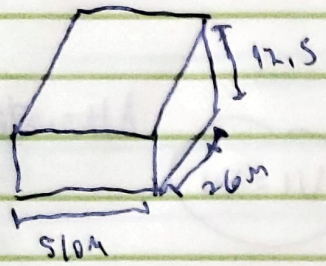
$AB = x \cdot \frac{x}{2}$
$AB = \frac{x^2}{2}$

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

Alternativa C

Lista Paralelepipedos e Cubos

1.




espessura = 0,5 cm

Comprimento = 51 - (2.0,5) = 51 - 1 = 50m

Largura = 26 - (2.0,5) = 26 - 1 = 25m

Altura = 12,5 - 0,5 = 12m

50 x 25 x 12 cm

V = 50.25.12

V = 15000 $cm^3$

Alternativa A

$V = 0,015\ m^3$

2. At = 72 $m^2$

D = ?

$72 = 6a^2$

$a^2 = \frac{72}{6}$

$A = \sqrt{12} \rightarrow A = 2\sqrt{3}$ m

$D = \sqrt{3.a^2}$

$D = \sqrt{3.12\sqrt{3}^2}$

$D = \sqrt{3.12}$

$D = \sqrt{36}$

$D = 6m$

Alternativa B

3. a = 50cm → $\frac{50}{100}$ = 0,5m

V = ?

$V = a^3$

$V = 0,5^3$

$V = 0,125 m^2$

V = 0,125.1000

V = 125 litros

2. Aresta = 1m

Alternativa A

$V = a^3$

$V = 1^3$

V = 1m

1 L 1000

1000 litros

1000 - 1

v

999 litros

$1m^2$ — 1000l

$1m^3 - x$ — 999l

1000 - 1000x = 999

-1000x = 999 - 1000

-1000x = -1 (.-1)

1000x = 1

$x = \frac{1}{1000} = 0,001 m^3$

/ /

D S T Q Q S S

⑤ $V = A \cdot B \cdot C$

$V_1 = 2a \cdot 2B \cdot 2C \longrightarrow V_1 = 4ABC$

Alternativa C

→ como $V_1 = 4ABC$ e $V = ABC$, temos que $V_1 = 4V$

6. Lado $= 4\sqrt{3}$ cm – equilátero
At = ?
h = ?

$V = (4\sqrt{3})^3$
$V = 64 \cdot 3 \cdot \sqrt{3}$
$V = 192\sqrt{3}$ cm³

$h\Delta = \frac{4\sqrt{3} \cdot \sqrt{3}}{2}$

$h\Delta = 6$ cm

$AB = \frac{4\sqrt{3} \cdot 6^3}{x}$

$AB = 12\sqrt{3}$ cm

$h\square = \frac{192\sqrt{3}}{12\sqrt{3}}$

$h\square = 16$ cm

$AL = 3 \cdot 4\sqrt{3} \cdot 6$

$AL = 192\sqrt{3}$ cm²

$At = 2AB + AL$
$At = 2 \cdot 12\sqrt{3} + 192\sqrt{3}$
$At = 24\sqrt{3} + 192\sqrt{3}$

$At = 216\sqrt{3}$ cm²

Alternativa