Prismas

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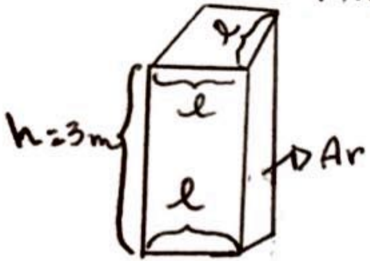
1

$A_T = 2A_b + A_L$



4 laterais

$$\left.\begin{array}{l} A_b = \ell^2 \\ A_L = 4 * A_r \Rightarrow A_L = 4 * \ell . 3 \\ A_r = b . h \qquad A_L = 12\ell \\ A_r = \ell . h \\ A_r = \ell . 3 \end{array}\right\}$$

$A_t = 2 . \ell^2 + 12\ell$

$80 = 2\ell^2 + 12\ell$

$2\ell^2 + 12\ell - 80 = 0$

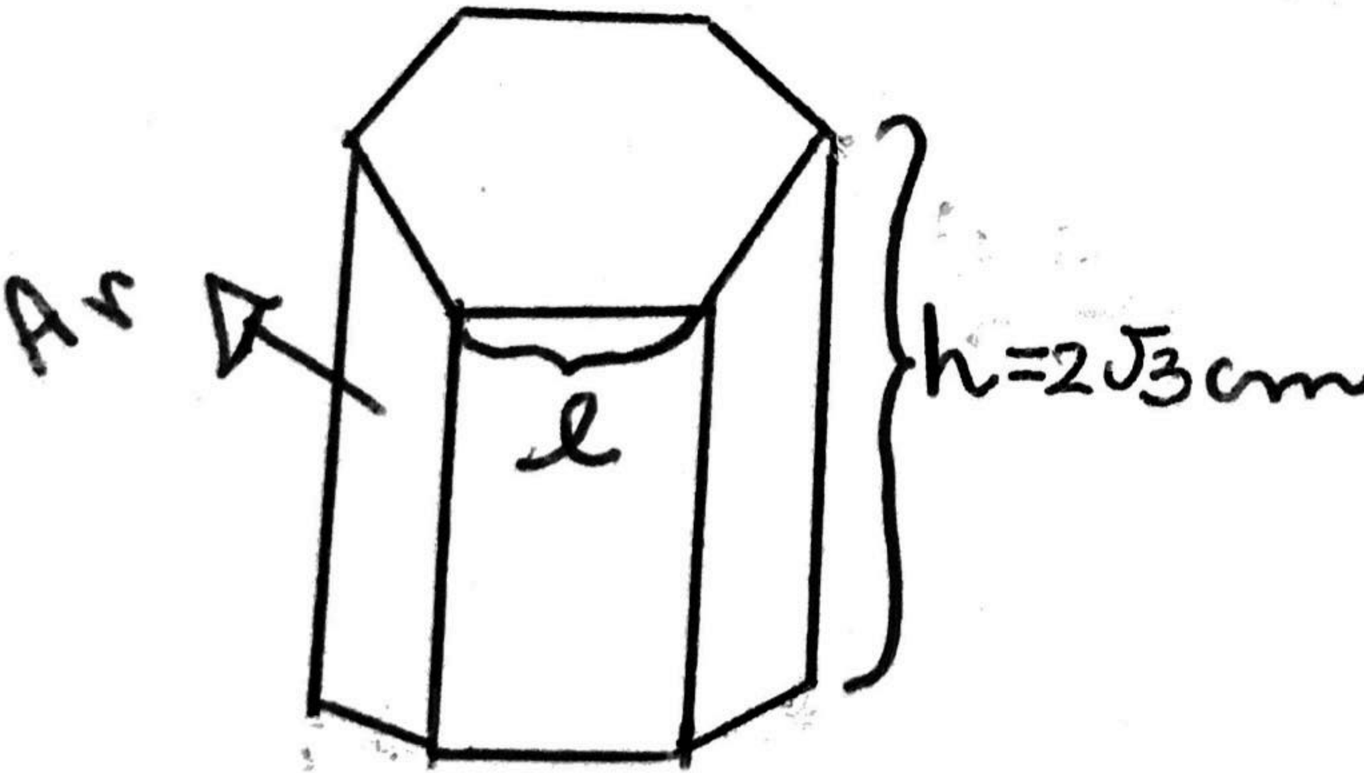
$\underline{-10} + \underline{4} = \frac{-b}{a} = -6$

$\underline{-10} . \underline{4} = \frac{c}{a} = -40$

$S = \{-10, 4\}$

medida de lado é positiva $\Rightarrow$ $\ell = 4m$

②



↳ 6 laterais

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

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

$$4(24\sqrt{3}) = 6 \cdot l^2\sqrt{3}$$

$$96\sqrt{3} = l^2 \cdot 6\sqrt{3}$$

$$l^2 = \frac{96\cancel{\sqrt{3}}}{6\cancel{\sqrt{3}}}$$

$$l^2 = 16$$

$$l = \sqrt{16}$$

$$l = 4\,cm$$

$$Al = 6 * Ar$$

$$Ar = b \cdot h$$

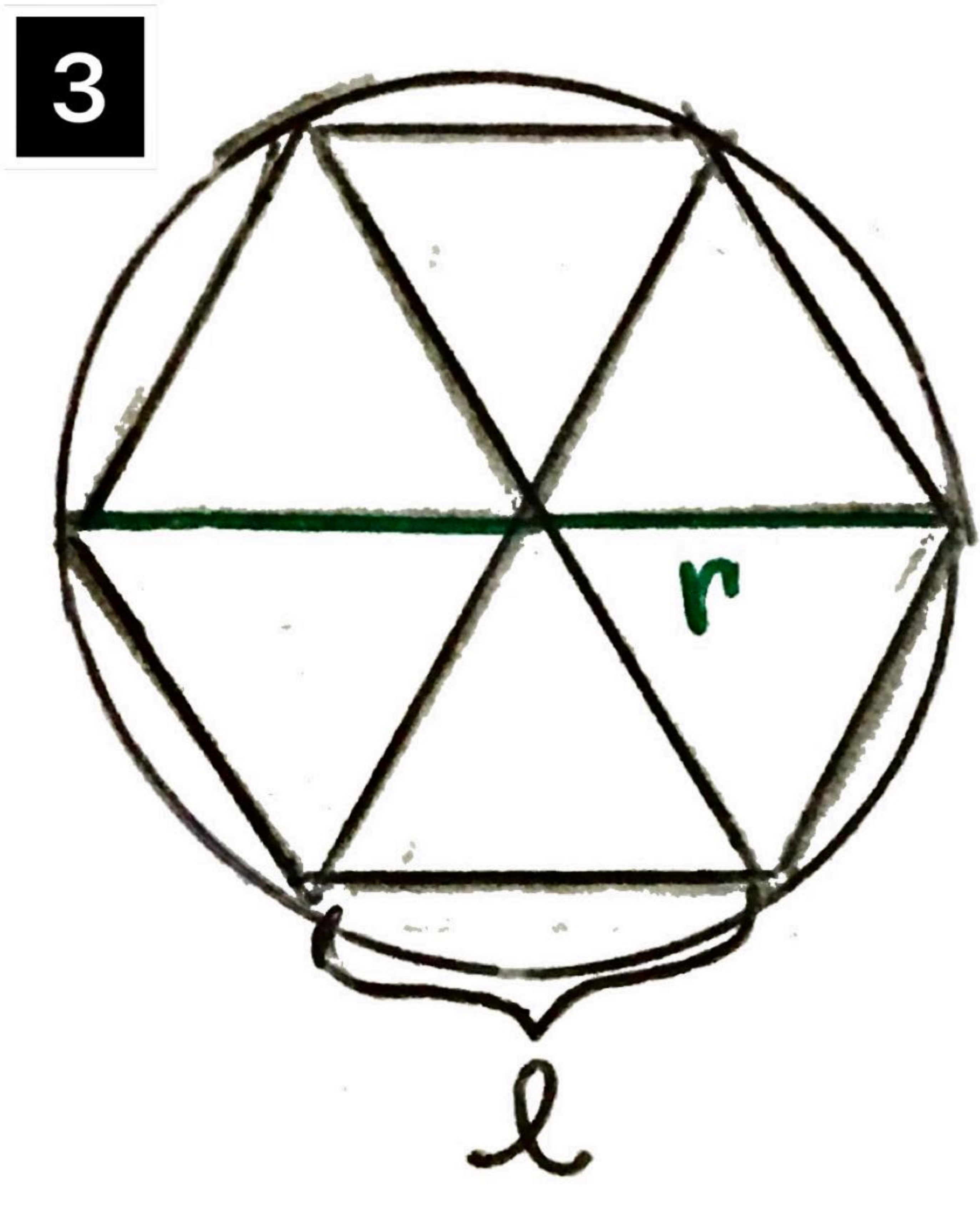
$$Ar = l \cdot h \Rightarrow 2\sqrt{3}\,cm$$

$$Ar = 4 \cdot 2\sqrt{3}$$

$$Ar = 8\sqrt{3}$$

$$Al = 6 * 8\sqrt{3}$$

$$\boxed{Al = 48\sqrt{3}\,cm^2}$$


3
r
l

$$A_\Delta = \frac{l^2\sqrt{3}}{4}$$

$r = l$

$$\Rightarrow A_\Delta = \frac{r^2\sqrt{3}}{4}$$

$$Ab = 6\,\frac{r^2\sqrt{3}}{4}$$

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

$$Ab = \frac{24\sqrt{3}}{4}$$

$$Ab = 6\sqrt{3}$$

hexágono = 6 laterais

$AL = 6 * Ar$

$Ar = b.h$

$Ar = l.h \Rightarrow \sqrt{3}$

$l = r = 2$

$Ar = 2.\sqrt{3}$

$AL = 6 * 2\sqrt{3}$

$AL = 12\sqrt{3}$

$At = 2Ab + AL$

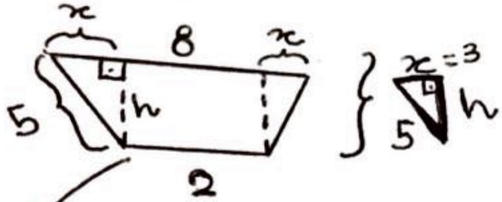
$At = 2.6\sqrt{3} + 12\sqrt{3}$

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

$At = 24\sqrt{3}^{\,2}$

4)

$$Ab = \frac{(B+b).h}{2}$$



Área base

$$8-2 = x+x$$
$$6 = 2.x$$
$$x = 6/2$$
$$x = 3$$

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

$$Ab = \frac{(8+2).4}{2}$$
$$Ab = \frac{10.4}{2}$$
$$Ab = 20\ m^2$$

$AL = 2\,Ar + 2\,At$

$Ar = b \cdot h$

↳ Área retângulo

$V = ab \cdot h$

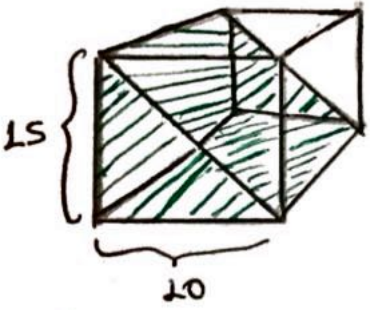
$V = 20 \cdot h$

$h = 5\,m^3$ ⇒ altura do prisma

$V = 20 . 5$

$V = 100\,m^3$

(5)



$V_{\square} = ab \cdot h$

$V_{\square} = 10^2 \cdot 15$

$V_{\square} = 100 \cdot 15$

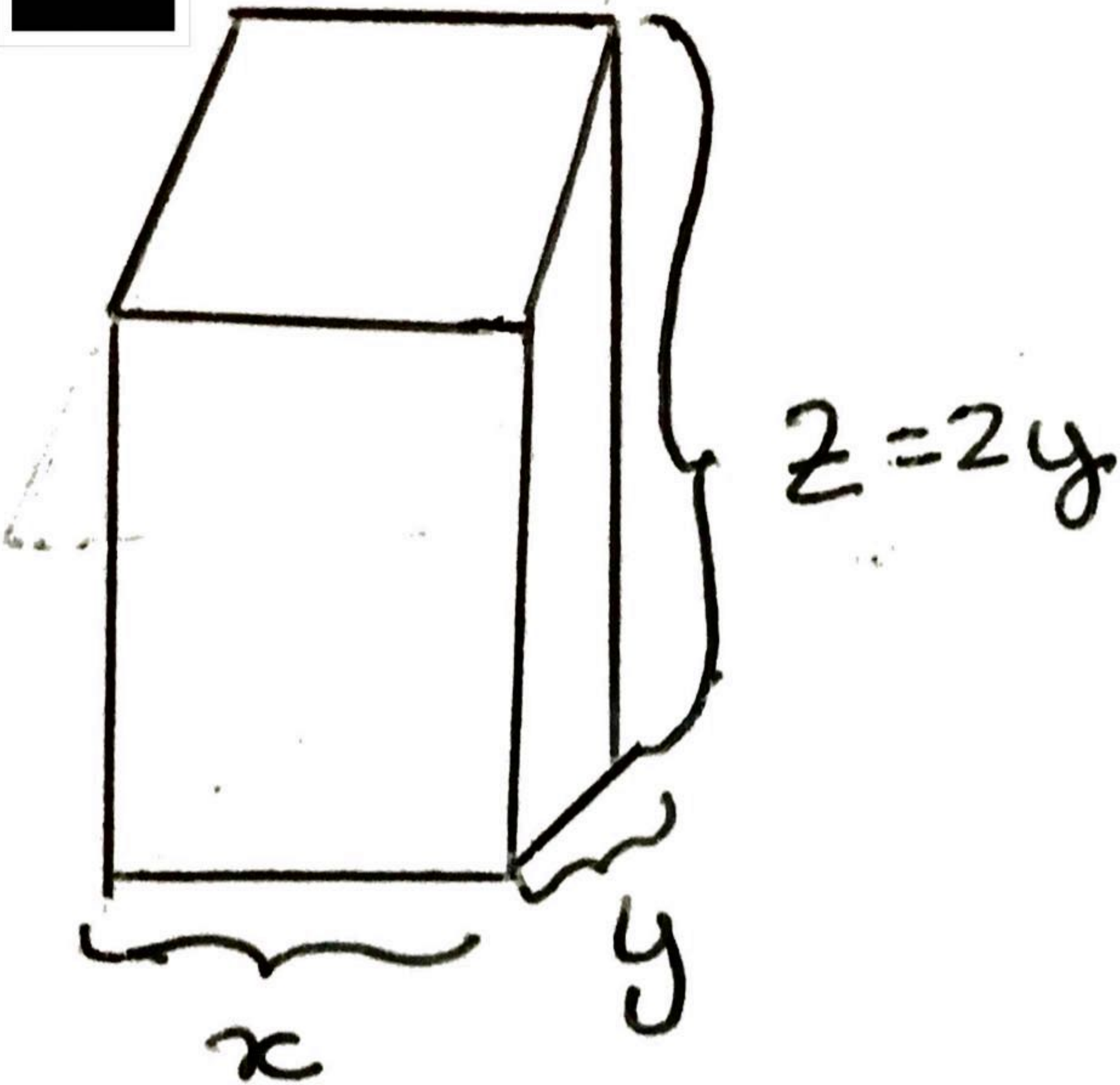
$V_{\square} = 1500$

$A_{cunha} = \dfrac{1500}{2}$

$\boxed{A_{cunha} = 750 \text{ cm}^3}$

↳ a cunha é a metade de um prisma de base quadrada.

6



(6)

$Ab = x \cdot y$

$AL = 4(x \cdot z) \rightarrow$ área da lateral retongular

$At = 2Ab + AL$

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

$4x^2 = 2xy + 4x \cdot 4z$

$z = 2y$

$4x^2 = 2xy + 4x \cdot 2y \div 2$

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

$\rightarrow$ ñ sei continuar !!

Paralelepípedos e cubos

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1)

$V = ab \cdot h$

$ab = b \cdot h$

$b = 51 - (0,5 * 2) \Rightarrow$ espessura dos comprimentos

$b = 50\,cm = 0,5\,m$

$h = 26 - (0,5 * 2) \Rightarrow$ espessura das larguras

$h = 25\,cm = 0,25\,m$

$ab = 0,5 * 0,25$

$ab = 0,125\,m^2$

$V = 0,125 \cdot h$

$h = 12,5 - 0,5 \Rightarrow$ espessura da altura

$h = 12\,cm$ ou $0,12\,m$

$V = 0,125 * 0,12$

$V = 0,015\,m^3$

②

(I) Aresta do cubo =

Área Face = 72/6 = 12 m^2

$a^2 \to$ área quadrado

$a^2 = 12$

$$\begin{array}{r|l} 12 & 2 \\ 6 & 2 \\ 3 & 3 \\ 1 & 2\sqrt{3} \end{array}$$

$a = 2\sqrt{3}$ m

(II) Diagonal

$D = a\sqrt{3}$

$D = 2\cancel{\sqrt{3}} \cdot \cancel{\sqrt{3}}$

$D = 2 . 3$

$D = 6$ m

3

$V = a^3$

$a = 50\ cm$

$V = 50^3$

$V = 12500\ cm^3 = \frac{12500}{1000}$

$\boxed{V = 125\ m^3}$

4)

$a = 1\,m$

$V = a^3$

$V = 1^3 = 1\,m^3 = 1000\,\ell$

$\Rightarrow V_{retirado} = 1\,\ell \Rightarrow \frac{1}{1000} = 0{,}001\,m^3$

$V_{retirado} = a^2 \cdot h$

$0{,}001 = 1^2 \cdot h$

$h = 0{,}001\,m \Rightarrow$ baixa de nível

5

$V = a \cdot b \cdot c$

c = altura

$V_2 = 2a \cdot 2b \cdot c$

$V_2 = 4\underbrace{abc}_{V_1}$

→ 4 vezes $a \cdot b \cdot c$,

4 vezes o V

$\boxed{V_2 = 4V}$

6)

$V_{pr} = V_c$

$V_c = a^3$

$V_c = 4\sqrt{3} \cdot 4\sqrt{3} \cdot 4\sqrt{3}$

$V_{pr} = \left(\frac{(4\sqrt{3})^2 \cdot \sqrt{3}}{4}\right) \cdot h$

$\Rightarrow \frac{\cancel{(4\sqrt{3})^2} \cdot \sqrt{3}}{4} \cdot h = \cancel{4\sqrt{3}} \cdot \cancel{4\sqrt{3}} \cdot 4\sqrt{3}$

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

$4(4\sqrt{3}) = h\sqrt{3}$

$16\sqrt{3} = h\sqrt{3}$

$h = \frac{16\sqrt{3}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{16 \cdot 3}{3} = 16$

$At\ prisma = 2Ab + Al$

$Ab = \frac{l^2\sqrt{3}}{4} \Rightarrow \frac{(4\sqrt{3})^2 \cdot \sqrt{3}}{4}$

$Ab = \frac{16 \cdot 3 \cdot \sqrt{3}}{4} = \frac{48\sqrt{3}}{4} = 12\sqrt{3}$

$Al = 3 \cdot (l \cdot h)$

↳ 3 laterais

$AL = 3 \cdot 16 \cdot 4\sqrt{3}$

$AL = 192\sqrt{3}$

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

$At\ prisma = 2 \cdot 24\sqrt{3} + 192\sqrt{3}$

$\boxed{At\ prisma = 216\sqrt{3}\ cm^2}$