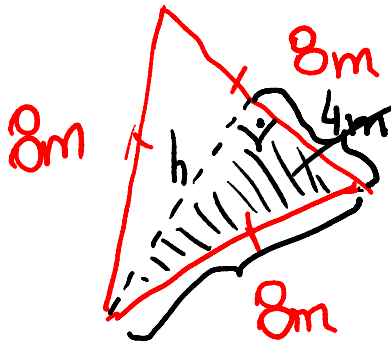
Altura de um triângulo equilátero:



Pitágoras: $a^2 = b^2 + c^2$

$8^2 = 4^2 + h^2$

$64 = 16 + h^2$

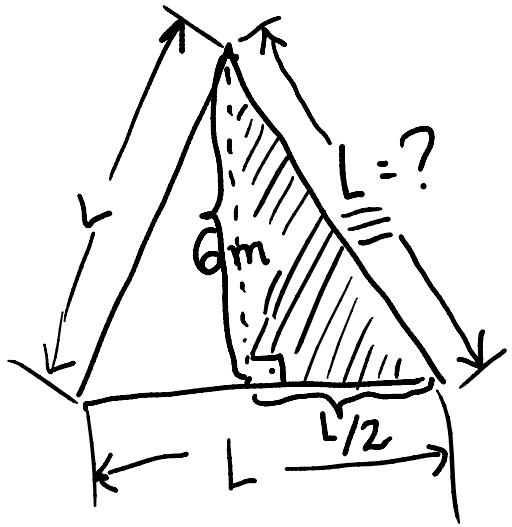
$64 - 16 = h^2$

$48 = h^2$

$\sqrt{48} = h^2$

48	2
24	2
12	2
6	2
3	3
1	

$h = 4\sqrt{3}$



$a^2 = b^2 + c^2$

$L^2 = 6^2 + \left(\frac{L}{2}\right)^2$

$\frac{L^2}{1} = \frac{36}{1} + \frac{L^2}{4}$ mmc = 4

$4L^2 = 144 + L^2$

$4L^2 - L^2 = 144$

$3L^2 = 144$

$L^2 = \frac{144}{3}$

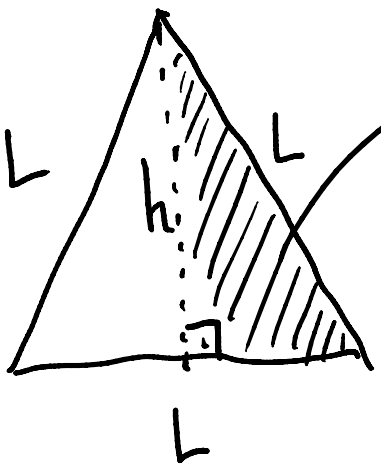
$L^2 = 48$

$L = \sqrt{48}$

$\boxed{L = 4\sqrt{3}\ m}$

144	3
24	48
0	

$\sqrt{L^2} = L$



$a^2 = b^2 + c^2$

$L^2 = h^2 + \left(\frac{L}{2}\right)^2$

$\frac{L^2}{1} = \frac{h^2}{1} + \frac{L^2}{4}$ mmc = 4

$4L^2 = 4h^2 + L^2$

$4L^2 - L^2 = 4h^2$

$3L^2 = 4h^2$

$\frac{3L^2}{4} = h^2$

$\sqrt{\frac{3L^2}{4}} = h$

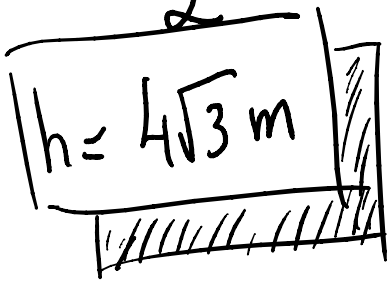
$h = \frac{L\sqrt{3}}{2}$

$d = l\sqrt{2}$

$$h = \frac{\ell\sqrt{3}}{2}$$

$$h = \frac{8\sqrt{3}}{2}$$

$$\boxed{h = 4\sqrt{3}\ m}$$



ENEM

$$h = \frac{\ell\sqrt{3}}{2}$$

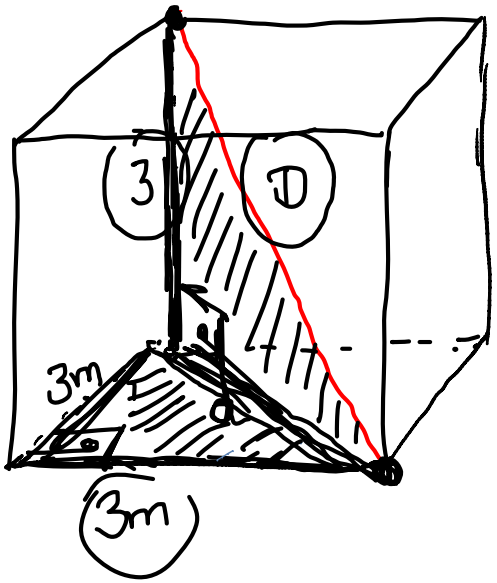
$$6 = \frac{\ell\sqrt{3}}{2}$$

$$12 = \ell\sqrt{3}$$

$$\ell = \frac{12}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$\ell = \frac{12\sqrt{3}}{3}$$

$$\boxed{\ell = 4\sqrt{3}\ m}$$



Cubo → Hexaedro Regular

DIAGONAL DO CUBO = ?

$d = \ell\sqrt{2}$

$D = a\sqrt{3}$

$(3\sqrt{2})^2 = 9 \cdot 2 = 18$ //

Pitágoras no Δ azul.

$a^2 = b^2 + c^2$

$d^2 = 3^2 + 3^2$

$d^2 = 9 + 9$

$d^2 = 18$

$d = \sqrt{18}$

$d = \sqrt{9 \cdot 2} = \sqrt{9}\cdot\sqrt{2}$

$\boxed{d = 3\sqrt{2}\,m}$

Pitágoras no Δ verde:

$a^2 = b^2 + c^2$

$D^2 = d^2 + 3^2$

$D^2 = 18 + 9$

$D^2 = 27$

$D = \sqrt{27}$

$D = \sqrt{9 \cdot 3}$

$\boxed{D = 3\sqrt{3}\,m}$