

$$\frac{x}{\sin 60^\circ} = \frac{4}{\sin 30^\circ} = \frac{y}{\sin 90^\circ}$$

$$90 + 30 + A = 180$$

$$180 - 120 = 60$$

$$A = 60$$

$$\frac{x}{0,866} = \frac{4}{0,5} = \frac{y}{1}$$

$$a^2 = b^2 + c^2 - 2 \cdot b \cdot c \cdot \cos \hat{A}$$

$$a^2 = 50^2 + 30^2 - 2 \cdot 50 \cdot 30 \cdot (0,7071)$$

$$a^2 = 2500 + 900 - 3000 \cdot (0,7071)$$

$$a^2 = 2500 + 900 + 2121,3$$

$$a = \sqrt{5521,3}$$

$$a = 74,30$$

$$0,5x = 4 \cdot 0,866$$

$$0,5x = 3,464$$

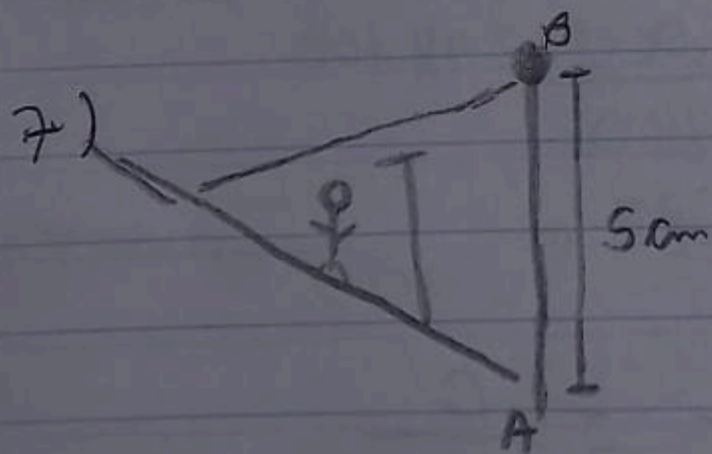
$$0,5$$

$$x = 6,928$$

$$0,5y = 4$$

$$\rightarrow 0,5$$

$$y = 8$$



$$a.) 90 - 30 = 60$$

$$\frac{5}{1,80} = \frac{x + 4m}{x}$$

$$5x = 1,8x + 7,2$$

$$5x - 1,8x = 7,2$$

$$3,2x = 7,2 \rightarrow x = 2,25$$

$$\rightarrow 3,2$$



$\Delta$  menor:

$$\text{tg } 45^\circ = \frac{CO}{CA}$$

$$1 = \frac{DC}{y} \rightarrow y = DC$$

$\Delta$  maior:

$$\text{tg } 30^\circ = \frac{DC}{12+DC}$$

$$\rightarrow 0,57 = \frac{DC}{12+DC}$$

$$0,57(12+DC) = DC$$

$$6,84 + 0,57x = x$$

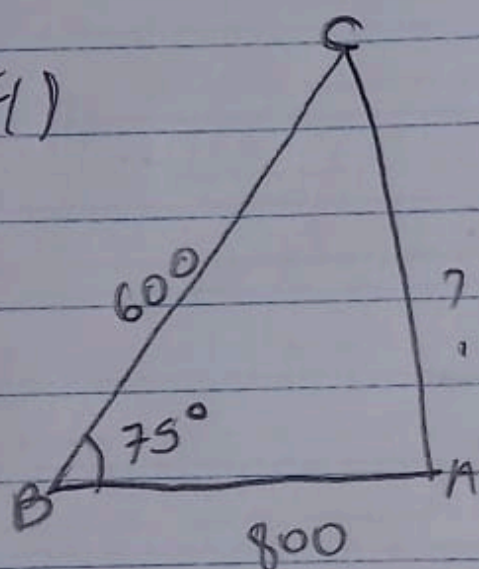
$$6,84 = 1x - 0,57x$$

$$6,43x = 6,84$$

$$\rightarrow 0,43$$

$$x \approx 15,90$$

04)



$$\cos 75^\circ = 0,2598$$

$$B^2 = a^2 + c^2 - 2a \cdot c \cdot \cos \hat{B}$$

$$B^2 = 800^2 + 600^2 - 2 \cdot 800 \cdot 600 \cdot 0,2598$$

$$B^2 = 640000 + 360000 - 1600 \cdot 600 \cdot 0,2598$$

$$0,2598$$

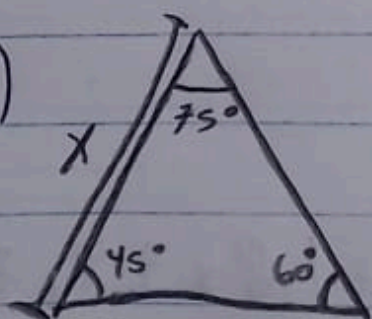
$$B^2 = 1000000 - 960000 \cdot 0,2598$$

$$B^2 = 1000000 - 248160$$

$$B = \sqrt{751840}$$

$$B \approx 867,087 \text{ m}$$

5)



$$45 + 60 + \hat{B}$$

$$180 - 105$$

$$\hat{B} = 75^\circ$$

$$\frac{A}{\sin 45^\circ} = \frac{60}{\sin 75^\circ} = \frac{C}{\sin 60^\circ}$$

$$\frac{A}{0,707} = \frac{60}{0,9659} = \frac{C}{0,866}$$

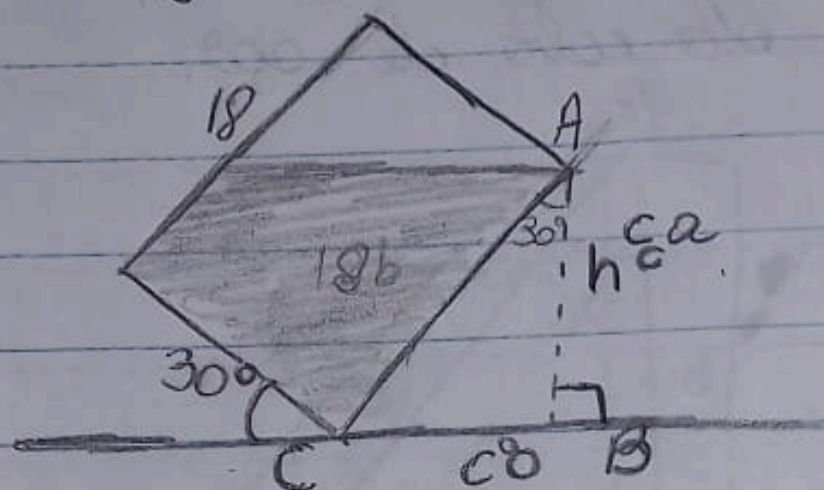
$$0,9659A = 60 \cdot 0,707$$

$$A = \frac{42,42}{0,9659} \approx 43,92$$

$$\left. \begin{array}{l} 0,9659C = 60 \cdot 0,866 \\ C = \frac{51,96}{0,9659} \approx 53,79 \end{array} \right\}$$



2) Um recipiente em forma de bloco retangular, com 18 cm de altura, foi tombado, como mostra a figura ao lado. Determine a altura aproximada  $h$  entre o solo e o nível do água contido no recipiente tombado.



$$\cos(30^\circ) = \frac{xc}{18}$$

$$\frac{\sqrt{3}}{2} = \frac{xc}{18}$$

$$\frac{2\sqrt{3}}{2} = \frac{xc}{18}$$

$$18 \cdot 2 = xc$$

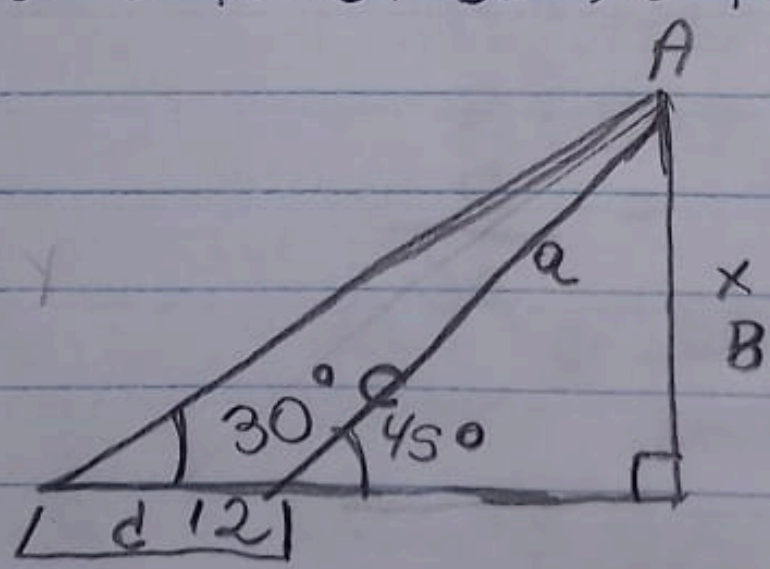
$$18 \cdot \sqrt{3} = xc$$

$$\frac{18 \cdot \sqrt{3}}{2} = xc$$

$$9\sqrt{3} = xc$$

$$9\sqrt{3} = xc$$

3) Determine o valor de  $xc$  na figura ao lado:





## ~~Que~~ Lista 2

1) Uma das extremidades de um cabo de aço está presa no topo de um poste vertical, formando com este um ângulo de  $30^\circ$ , enquanto a outra extremidade está fixada no chão a 5m do pé do poste.

a) O comprimento do cabo de aço.

~~mede 10 m~~

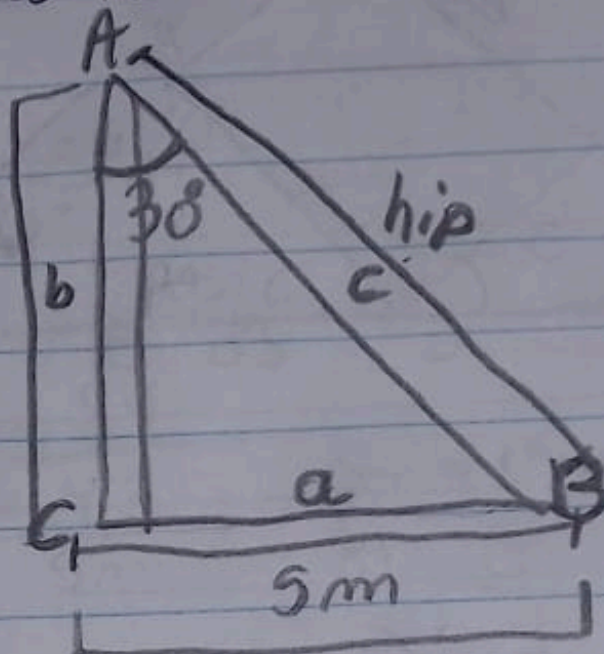
$$\tan(30^\circ) = \frac{5}{\text{hip}}$$

$$\frac{1}{2} = 0,5 = \frac{5}{\text{hip}}$$

$$0,5 \text{ hip} = 5$$

$$\text{hip} = \frac{5}{0,5}$$

$$\boxed{\text{hip} = 10}$$



b) A altura do poste

$$\tan(30^\circ) = \frac{5}{\text{MC}}$$

~~A altura é~~  $\frac{5}{0,577}$

$$\frac{\sqrt{3}}{3} \approx 0,577 = \frac{5}{\text{MC}}$$

$$0,577 \cdot \text{MC} = 5$$

$$\text{MC} = \frac{5}{0,577}$$



area  $\frac{b \cdot c \cdot \sin \hat{A}}{2}$

$\frac{6,25 \cdot 5 \cdot 0,866}{2}$

$\frac{27,06}{2} = 13,53 \text{ m}^2$