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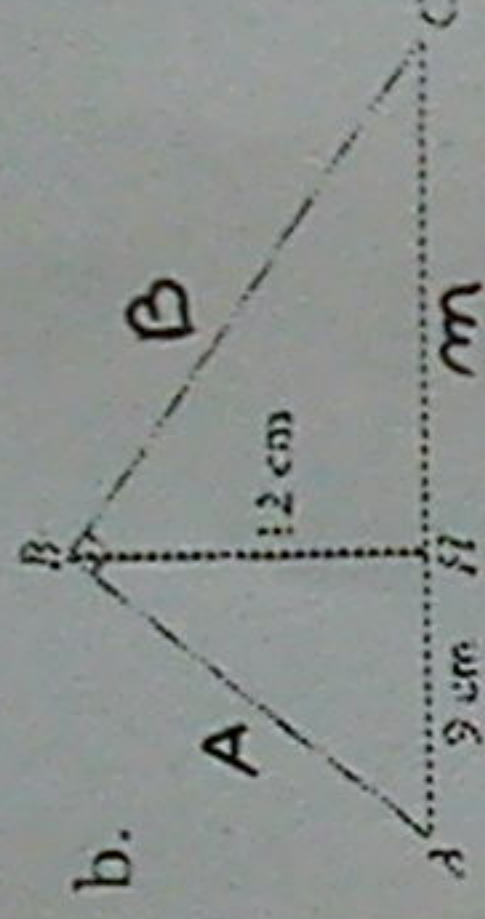
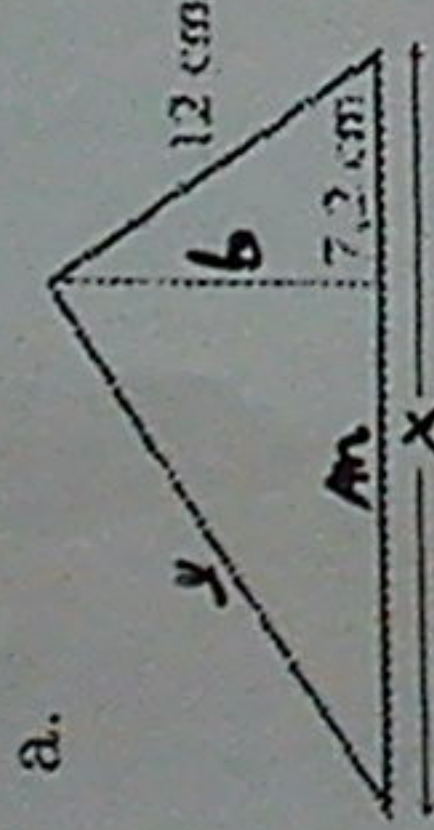
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- *1. Calcula el área y el perímetro de estos triángulos:



- *2. Sabiendo que $\operatorname{tg} 28^\circ = 0,53$. Calcula $\operatorname{sen} 28^\circ$ y $\operatorname{cos} 28^\circ$.

$$\operatorname{tg} = \frac{\operatorname{Sen}}{\operatorname{Cos}}$$

$$0,53 = \frac{\operatorname{Sen}}{\operatorname{Cos}}$$

$$0,53 \operatorname{Cos} = \operatorname{Sen}$$

$$\operatorname{Sen}^2 + \operatorname{Cos}^2 = 1$$

$$(0,53 \operatorname{Cos})^2 + \operatorname{Cos}^2 = 1$$

$$0,28 \operatorname{Cos}^2 + \operatorname{Cos}^2 = 1$$

$$1,28 \operatorname{Cos}^2 = 1$$

$$\operatorname{Cos}^2 = \frac{1}{1,28}$$

$$\operatorname{Cos}^2 = 0,78$$

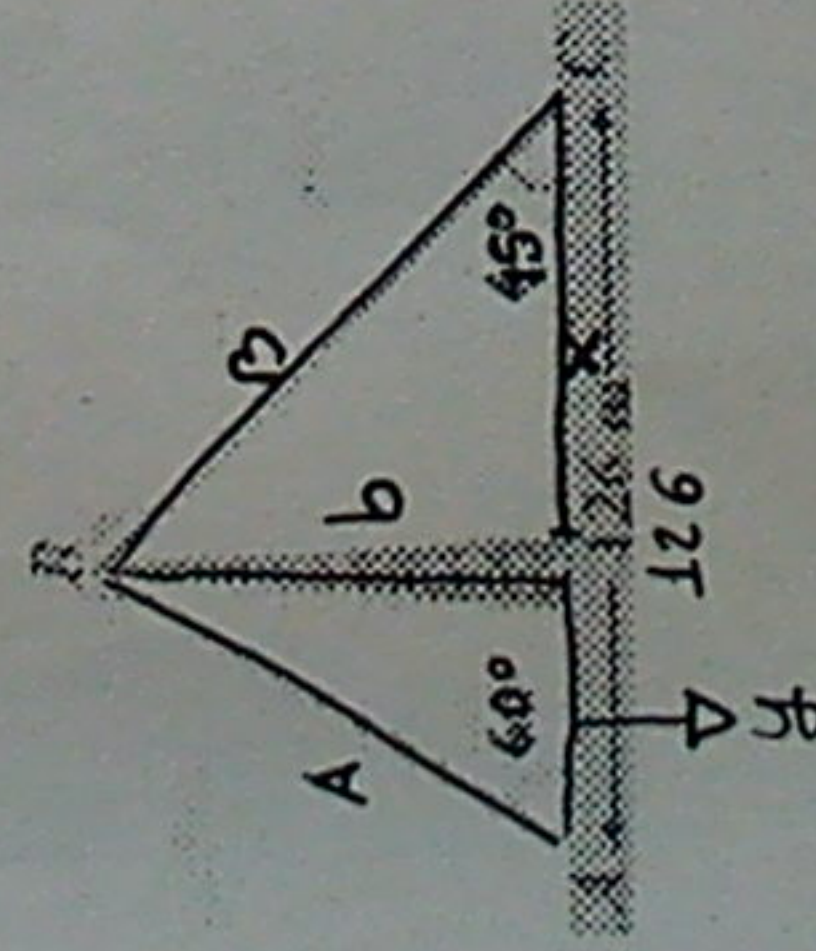
$$\operatorname{Cos} = \sqrt{0,78}$$

$$\operatorname{Cos} = \boxed{0,88}$$

$$\operatorname{Sen} = 0,88 \cdot 0,53$$

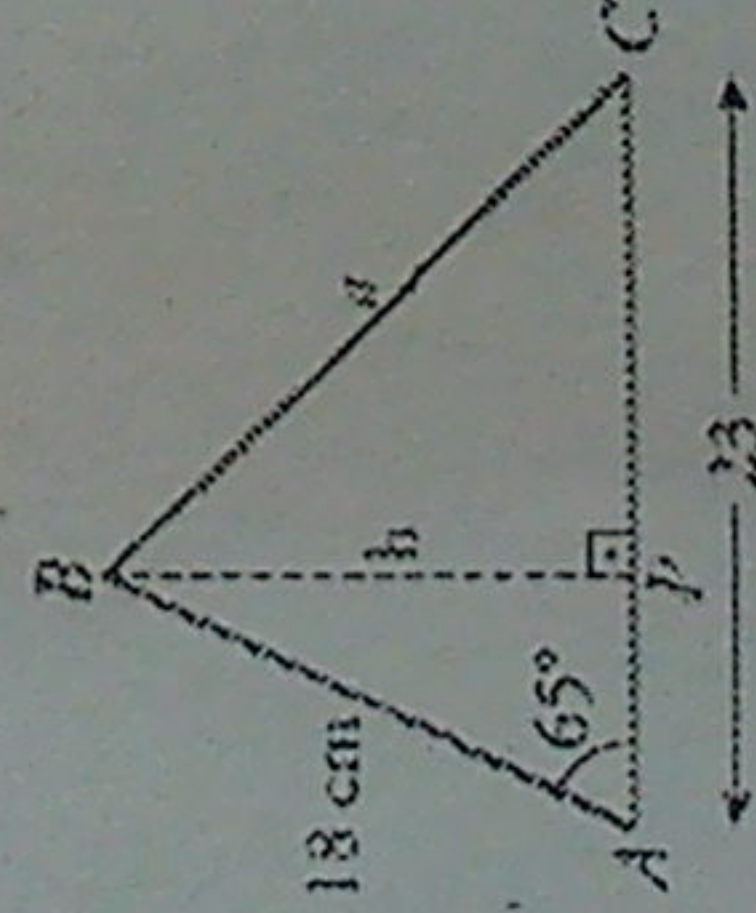
$$\operatorname{Sen} = \boxed{0,47}$$

- *3. Una antena de radio está sujeta al suelo con dos tirantes de cable de acero, como indica la figura. Calcula la altura de la antena y la longitud de los cables.



Altura de la antena es de 79'33 m
 y la longitud de los cables son 92'09 m y 112'2 m

- *4. En el triángulo ABC, calcula h y a.



$$\operatorname{Sen} 65 = \frac{h}{18} \rightarrow h = 18 \cdot \operatorname{Sen} 65$$

$$h = \boxed{16,3}$$

$$\operatorname{Cos} 65 = \frac{AP}{18} \rightarrow AP = \operatorname{Cos} 65 \cdot 18$$

$$AP = \boxed{7,6}$$

$$PC = 23 - 7,6 \rightarrow PC = 15,4$$

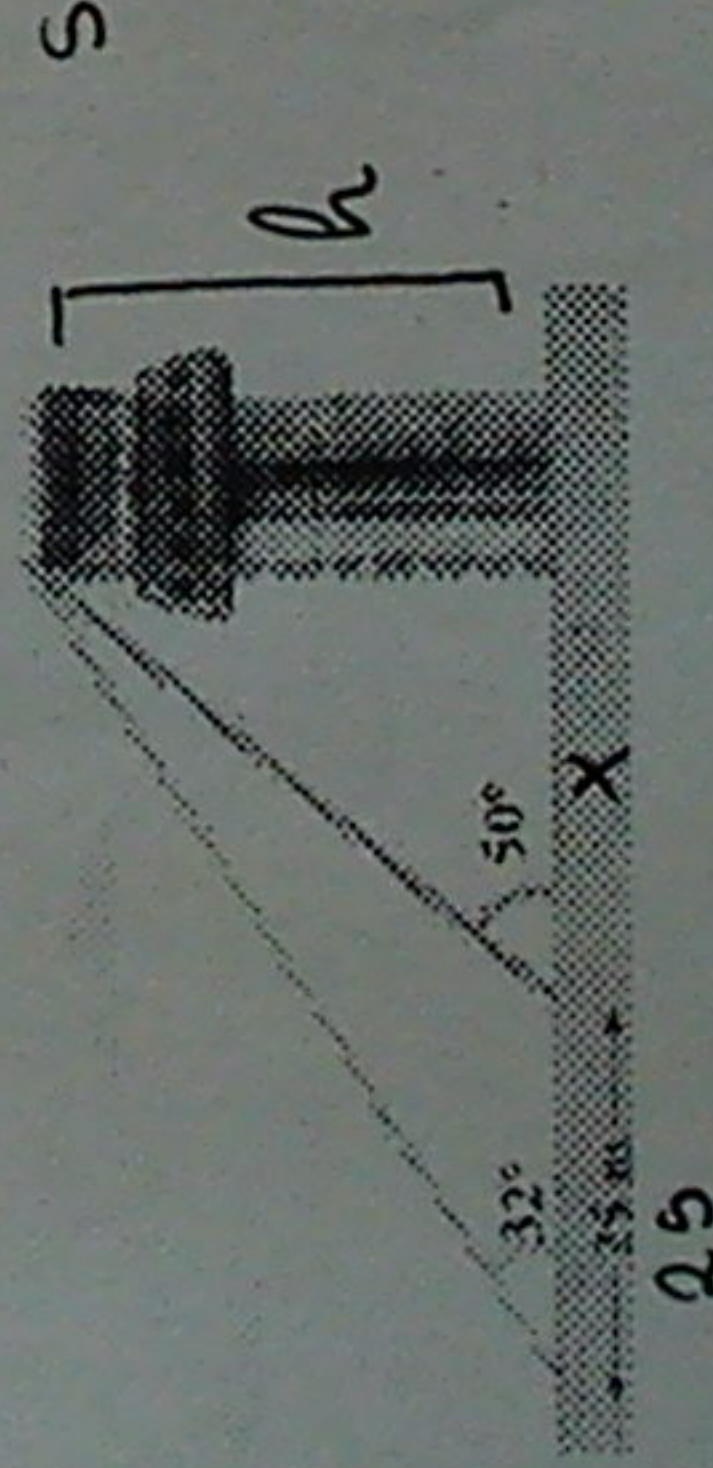
T. Pitagoras

$$a^2 = h^2 + PC^2$$

$$a^2 = 16,3^2 + 15,4^2$$

$$a = \sqrt{518,5} \rightarrow a = \boxed{22,8}$$

- *5. Desde el lugar donde me encuentro, la visual de la torre, forma un ángulo de 32° con la horizontal. Si me acerco 25 m, el ángulo es de 50° . Calcula la altura de la torre.



B) Origo Navarra

T. Pitagoras

$$h^2 = a^2 + b^2$$

$$12^2 = 7^2 + b^2$$

$$144 = 5184 + b^2$$

$$144 - 5184 = b^2$$

$$9216 = b^2 \rightarrow \sqrt{9216} = b$$

$$\boxed{96 = b}$$

$$\text{Perimetro} = 20 + 16 + 12 \rightarrow \boxed{48 \text{ cm}}$$

$$A = \frac{b \cdot a}{2} \rightarrow \frac{20 \cdot 96}{2} = \boxed{96 \text{ cm}^2}$$

b)

T. Pitagoras

$$h^2 = a^2 + b^2$$

$$A^2 = 9^2 + 12^2$$

$$A^2 = 225$$

$$A = \sqrt{225} \rightarrow \boxed{A = 15 \text{ cm}}$$

T. altura

$$h^2 = m \cdot m$$

$$12^2 = 9 \cdot m$$

$$144 = 9 \cdot m$$

$$\frac{144}{9} = m$$

$$\rightarrow \boxed{m = 16 \text{ cm}}$$

$$\overline{AC} = 9 + 16$$

$$\overline{AC} = \boxed{25 \text{ cm}}$$

$$\text{Perimetro} = 15 + 20 + 25 \rightarrow \boxed{60 \text{ cm}}$$

$$\text{Area} = \frac{25 \cdot 12}{2} = \boxed{150 \text{ cm}^2}$$

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T. altura

$$h^2 = m \cdot m$$

$$96^2 = 7^2 \cdot m$$

$$9216 = 7^2 \cdot m$$

$$\frac{9216}{7^2} = m \rightarrow \boxed{m = 12^8}$$

$$X = 12^8 + 7^2$$

$$\boxed{X = 20}$$

T. Cateto

$$C^2 = m \cdot x$$

$$C^2 = 20 \cdot 12^8$$

$$C^2 = 256 \rightarrow C = \sqrt{256}$$

$$\boxed{C = 16}$$

T. Pitagoras T. Cateto

$$C^2 = m \cdot a$$

$$B^2 = 16 \cdot 25$$

$$B^2 = 400 \rightarrow B = \sqrt{400}$$

$$\boxed{B = 20 \text{ cm}}$$

$$3. \quad \left. \begin{aligned} \tan 60 &= \frac{b}{126 - x} \\ \tan 45 &= \frac{b}{x} \end{aligned} \right\} \begin{aligned} b &= \tan 60 \cdot (126 - x) \\ b &= \tan 45 \cdot x \end{aligned}$$

$$b = x \quad \rightarrow \quad \boxed{b = 79'33 \text{ m}}$$

$$\begin{aligned} 2'7x &= 214'2 \\ x &= \frac{214'2}{2'7} \rightarrow \boxed{x = 79'33 \text{ m}} \end{aligned}$$

$$y = 126 - 79'33 \rightarrow y = \boxed{46'67}$$

Pythagoras

$$\begin{aligned} A^2 &= 46'67^2 + 79'33^2 \\ A &= \sqrt{8471'39} \rightarrow \boxed{A = 92'09} \end{aligned}$$

$$\begin{aligned} B^2 &= 79'33^2 + 79'33^2 \\ B^2 &= 12586'5 \\ B &= \sqrt{12586'5} \rightarrow \boxed{B = 112'2} \end{aligned}$$

$$5. \quad \tan 32 = \frac{h}{25 + x} \quad \rightarrow \quad h = \tan 32(25 + x) \rightarrow h = 0'62(25 + x)$$

$$\tan 50 = \frac{h}{x} \quad \rightarrow \quad h = \tan 50 \cdot x \rightarrow h = 1'19x$$

\rightarrow Substitute

$$\begin{aligned} 1'19x &= 0'62(25 + x) \\ 1'19x &= 15'5 + 0'62x \\ 1'19x - 0'62x &= 15'5 \\ 0'57x &= 15'5 \rightarrow x = \frac{15'5}{0'57} \end{aligned}$$

$$h = 1'19 \cdot 27'19$$

$$\boxed{h = 32'35 \text{ m}}$$

$$\rightarrow \boxed{x = 27'19}$$

La torre mide $32'35 \text{ m}$

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