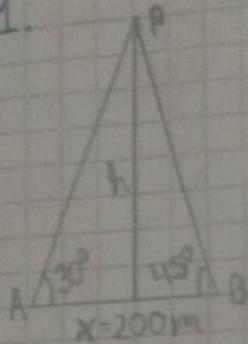


31/08/2021

Procedimientos Examen

1.



P = Ubicación del helicóptero.
 A = Elevación 30°
 B = Elevación 45°
 h = Altura del helicóptero.

$$\frac{x}{\sin(60^\circ)} = \frac{h}{\sin(30^\circ)}$$

$$x = \frac{h \cdot 0.866}{0.5}$$

$$x = 1.73h$$

$$\frac{(200-x)}{\sin(45^\circ)} = \frac{h}{\sin(45^\circ)}$$

$$200 \cdot x = h \cdot 1$$

$$200 \cdot x = h$$

$$200 \cdot h = x$$

$$x = 200 \cdot h$$

Ley del coseno:

$$200 \cdot h = 1.73$$

$$200 = 1.73 + h$$

$$200 = 2.73h$$

$$\alpha = 180^\circ - 30^\circ - 90^\circ$$

$$\alpha = 60^\circ$$

$$\beta = 180^\circ - 45^\circ - 90^\circ$$

$$\beta = 45^\circ$$

$$h = \frac{200}{2.73} = 73.2 \text{ m}$$

2.

$$\frac{8}{\sin(45^\circ)} = \frac{23}{\sin(C)}$$

$$\frac{8}{0.26} = \frac{23}{\sin(C)}$$

$$30.77 = \frac{23}{\sin(C)}$$

$$\sin(C) = \frac{23}{30.77}$$

$$\sin^{-1}(C) = 48.37$$

$$C = 48.37$$

$$A = 180 - 15 - 48.37$$

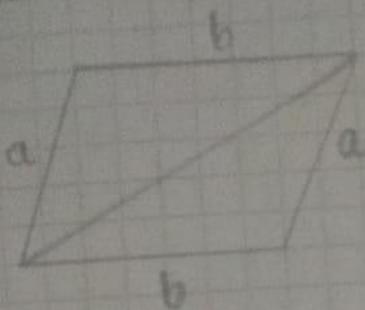
$$A = 116.63$$

$$\sin(A) = 0.89$$

$$a = \frac{a \cdot \sin(A)}{\sin(a)} = \frac{8 \cdot 0.89}{0.26} = \frac{7.12}{0.26} = 27.38$$

R = El pistón está lejos 27.38 cm.

3.



$$\text{Lado 1} = b = 5 \text{ cm}$$

$$\text{Lado 2} = c = 10 \text{ cm}$$

$$\text{Angulo} = A = 120^\circ$$

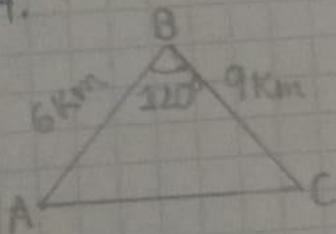
$$A^2 = \sqrt{5^2 \text{ cm} + 10^2 \text{ cm} - 2 \cdot 5 \text{ cm} \cdot 10 \text{ cm} \cdot \cos(120^\circ)}$$

$$A^2 = \sqrt{25 + 100 + 50}$$

$$A^2 = \sqrt{175}$$

$$A^2 = 13,22 \text{ cm}$$

4.



$$AB = 6 \text{ km}$$

$$BC = 9 \text{ km}$$

$$\angle B = 120^\circ$$

$$AC = ?$$

$$AC^2 = AB^2 + BC^2 - 2AB \cdot BC \cdot \cos(120^\circ)$$

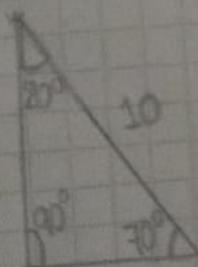
$$AC^2 = (6 \text{ km})^2 + (9 \text{ km})^2 - 2 \cdot 6 \cdot 9 \cdot (-0.5)$$

$$AC = \sqrt{36 + 81 + 54}$$

$$AC = \sqrt{171}$$

$$AC = 13,07 \text{ km}$$

5.



$$\frac{h}{\text{Sen } 70^\circ} = \frac{10}{\text{Sen } 90^\circ}$$

$$h = \frac{10 \cdot \text{Sen}(70^\circ)}{\text{Sen}(90^\circ)} = 9,39 \text{ m}$$