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Nombre del trabajo: PROBLEMARIO

Materia: FÍSICA

PASIÓN POR EDUCAR

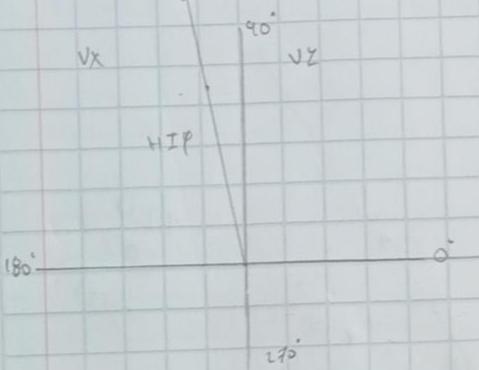
Grado: 4TO CUATRIMESTRE

Grupo: A

PROBLEMATO...

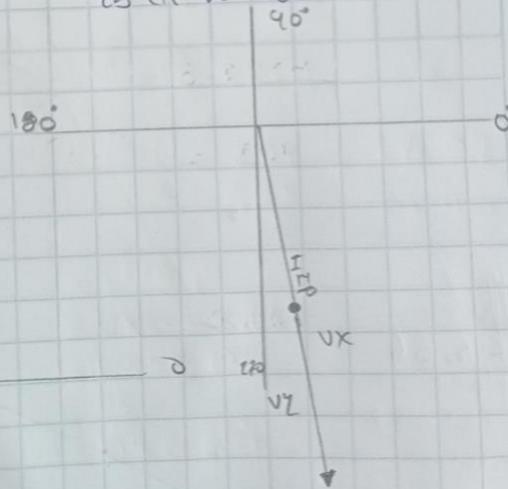
RESOLVE DE FORMA CORRECTA Y LIMPIA LOS SIGUENTES PROBLEMAS.

1 = VECTOR 5 CM A 100°

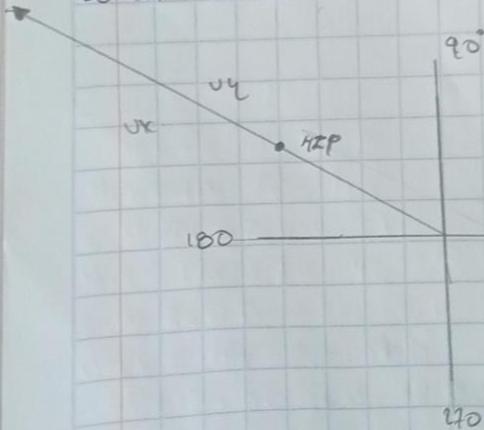


3er VECTOR

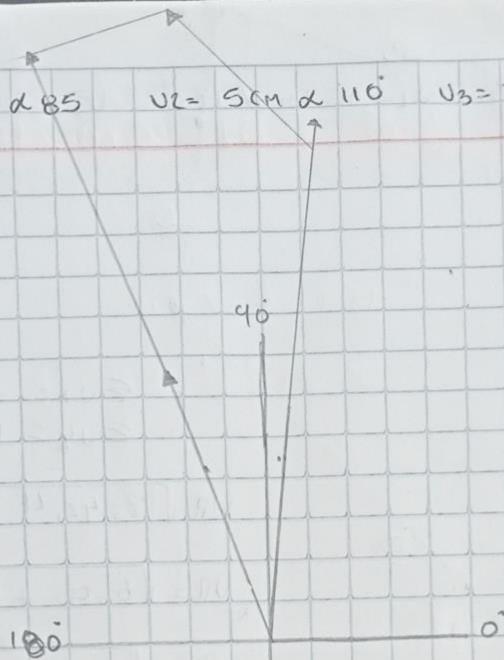
25 CM A 280°



VECTOR 2.
20 CM A 150°



4. $V_1 = 10 \text{ cm} \angle 85^\circ$ $V_2 = 5 \text{ cm} \angle 110^\circ$ $V_3 = -8 \text{ cm} \angle 200^\circ$



$$V_1 = 10 \cos 85^\circ$$

$$= 0.87$$

$$V_{1y} = 10 \sin 85^\circ$$

$$= 9.46$$

$$V_{2x} = 5 \cos 110^\circ$$

$$= -1.71$$

$$V_{2y} = 5 \sin 110^\circ$$

$$= 4.69$$

$$V_{3x} = 8 \cos 200^\circ$$

$$= -7.52$$

$$V_{3y} = 8 \sin 200^\circ$$

$$= -2.74$$

$$\Sigma V_x = -8.35$$

$$\Sigma V_y = 11.42$$

$$V_R = \sqrt{8.35^2 + 11.42^2}$$

$$V_R = \sqrt{69.72 + 129.08}$$

$$V_R = 214.8$$

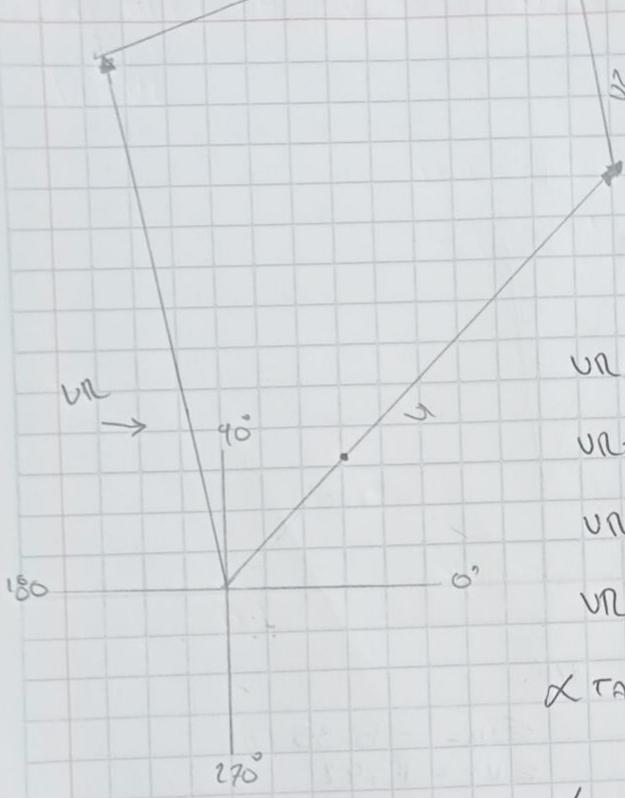
$$V_R = 14.55 \text{ cm}$$

$$\alpha \text{ TAN}^{-1} \frac{\Sigma V_y}{\Sigma V_x} = \frac{11.42}{-8.35} = 54$$

$$V_R = 14.2 \text{ cm}$$

$$\alpha = 135^\circ = 55$$

5. $V_1 = 10 \text{ cm} \angle 45^\circ$ $V_2 = 15 \text{ cm} \angle 100^\circ$ $V_3 = 8 \text{ cm} \angle 210^\circ$



$$\begin{aligned} \Sigma V_x &= -2.45 \\ \Sigma V_y &= 17.84 \end{aligned}$$

$$\begin{aligned} V_R &= \sqrt{2.45^2 + 17.84^2} \\ V_R &= \sqrt{6.00 + 318.26} \\ V_R &= \sqrt{324.26} \\ V_R &= 18.00 \text{ cm} \end{aligned}$$

$$\begin{aligned} \alpha \text{ TAN}^{-1} &= \frac{\Sigma V_y}{\Sigma V_x} = \frac{17.84}{2.45} \\ \alpha &= 82^\circ \end{aligned}$$

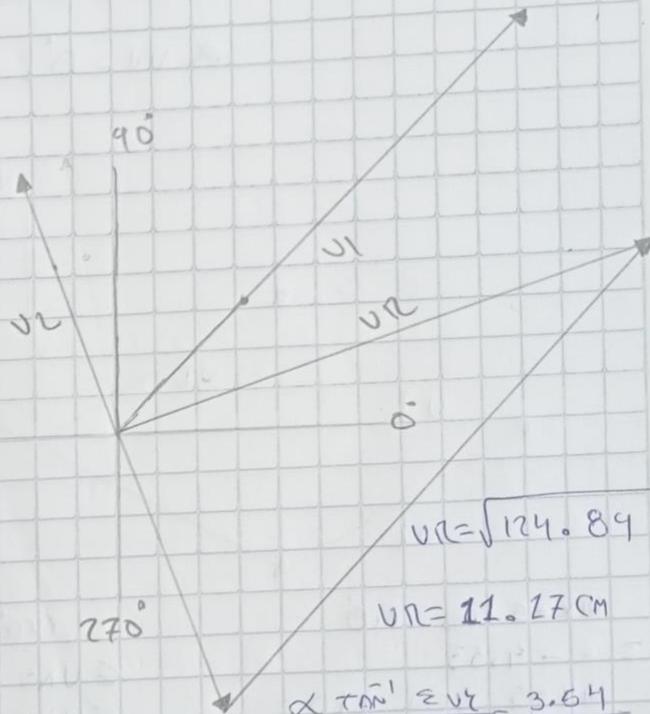
$$\begin{aligned} V_{1x} &= 10 \cos 45^\circ \\ &= 7.07 \\ V_{1y} &= 10 \sin 45^\circ \\ &= 7.07 \\ V_{2x} &= 15 \cos 100^\circ \\ &= -2.60 \\ V_{2y} &= 15 \sin 100^\circ \\ &= 14.77 \\ V_{3x} &= 8 \cos 210^\circ \\ &= -6.92 \end{aligned}$$

$$\begin{aligned} V_{3y} &= 8 \sin 210^\circ \\ &= -4 \end{aligned}$$

VECTOR RESULTANTE Y ANJULO: RESTA.

6. $V_1 = 10 \text{ cm } \alpha 45^\circ$ $V_2 = 5 \text{ cm } \alpha 110^\circ$

$V_1 - V_2$
↑



$V_{1x} = 10 \cos 45^\circ$
 $= 7.07$
 $V_{1y} = 10 \sin 45^\circ$
 $= 7.07$
 $V_{2x} = 5 \cos 315^\circ$
 $= 3.53$
 $V_{2y} = 5 \sin 315^\circ$
 $= -3.53$

$V_R = \sqrt{124.84}$
 $V_R = 11.17 \text{ cm}$
 $\alpha = \tan^{-1} \frac{E_{V_y}}{E_{V_x}} = \frac{3.54}{10.6}$

$E_{V_x} = 10.6$
 $E_{V_y} = 3.54$
 $V_R = \sqrt{10.6^2 + 3.54^2}$
 $V_R = \sqrt{122.36 + 12.53}$

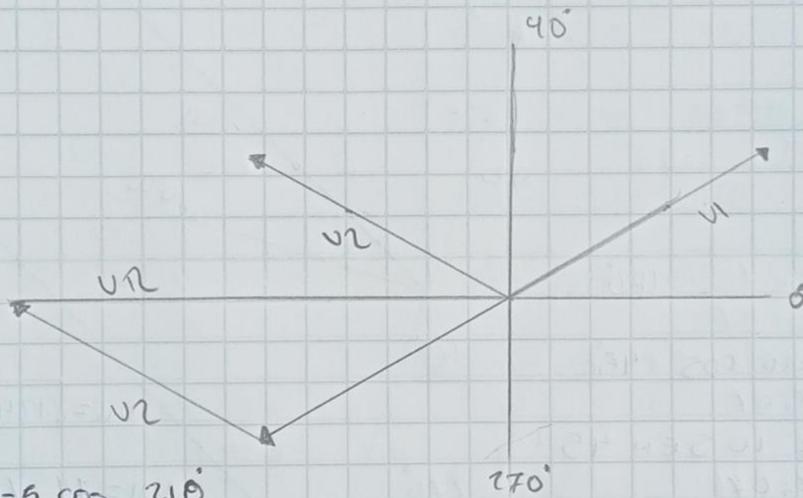
$V_R \alpha = 18^\circ$
 $V_R = 11 \text{ cm}$
 $\alpha V_R = 18^\circ$

$$V_1 = 5 \text{ cm } \angle 30^\circ \quad V_2 = 5 \text{ cm } \angle 150^\circ$$

$$V_1 - V_2$$

$$V_R = 8.7 \text{ cm}$$

$$\angle V_R = 0^\circ$$



$$V_{1x} = 5 \cos 30^\circ$$

$$= 4.33$$

$$V_{1y} = 5 \sin 30^\circ$$

$$= 2.5$$

$$V_{2x} = 5 \cos 150^\circ$$

$$= -4.33$$

$$V_{2y} = 5 \sin 150^\circ$$

$$= 2.5$$

$$\alpha \text{ TAN}^{-1} \frac{\sum V_y}{\sum V_x} = \frac{0}{-8.66} = 0$$

$$\alpha V_R = 0^\circ$$

$$\sum V_x = -8.66$$

$$\sum V_y = 0$$

$$V_R = \sqrt{8.66^2 + 0^2}$$

$$V_R = \sqrt{74.99 + 0}$$

$$V_R = \sqrt{74.99}$$

$$V_R = 8.65 \text{ cm}$$