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Nombre del trabajo: PROBLEMARIO

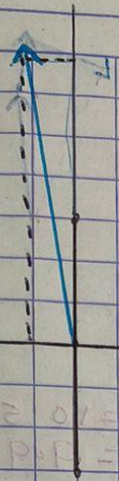
Materia: FISICA

Grado: 2

Grupo: A

Comitán de Domínguez Chiapas a 1 MAYO de 2023.

1



$$V_x = 5 \text{ cm} \cos 100^\circ$$

$$V_x = -0.866 \text{ cm}$$

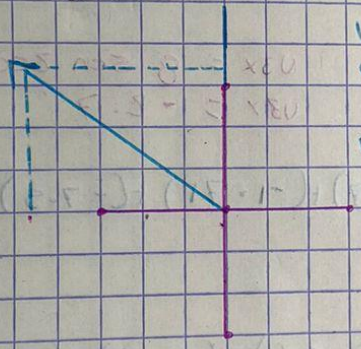
$$\cos = \frac{x}{r} = \frac{x}{5}$$

$$V_y = 5 \text{ cm} \sin 100^\circ$$

$$V_y = 4.92 \text{ cm}$$

2

$$V = 20 \text{ cm} - 150^\circ$$



$$V_x = 20 \cos 150^\circ$$

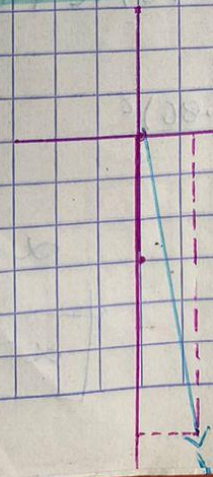
$$V_x = -17.32 \text{ cm}$$

$$V_y = 20 \sin 150^\circ$$

$$V_y = 10 \text{ cm}$$

3

$$25 \text{ cm} - 280^\circ$$



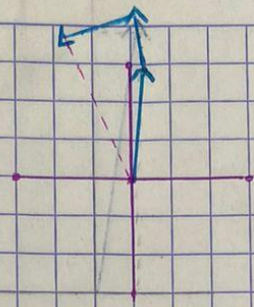
$$V_x = 25 \cos 280^\circ$$

$$V_x = -4.3 \text{ cm}$$

$$V_y = 25 \sin 280^\circ$$

$$V_y = -24.62 \text{ cm}$$

$$\begin{aligned} V_1 &= 10 \text{ cm} = 85^\circ \\ V_2 &= 5 \text{ cm} = 110^\circ \\ V_3 &= 8 \text{ cm} = 200^\circ \end{aligned}$$



$$\begin{aligned} V_{1x} &= 10 \cos 85 \\ V_{1x} &= 0.87 \end{aligned}$$

$$\begin{aligned} V_{1y} &= 10 \sin 85 \\ V_{1y} &= 9.96 \end{aligned}$$

$$\begin{aligned} V_{2x} &= 5 \cos 110 \\ V_{2x} &= -1.71 \end{aligned}$$

$$\begin{aligned} V_{2y} &= 5 \sin 110 \\ V_{2y} &= 4.6 \end{aligned}$$

$$\begin{aligned} V_{3x} &= 8 \cos 200 \\ V_{3x} &= -7.5 \end{aligned}$$

$$\begin{aligned} V_{3y} &= 8 \sin 200 \\ V_{3y} &= -2.7 \end{aligned}$$

$$\begin{aligned} V_{Rx} &= V_{1x} + V_{2x} + V_{3x} = (0.87) + (-1.71) + (-7.5) \\ V_{Rx} &= -8.34 \end{aligned}$$

$$\begin{aligned} V_{Ry} &= V_{1y} + V_{2y} + V_{3y} = (9.96) + (4.6) + (-2.7) \\ V_{Ry} &= 11.86 \end{aligned}$$

$$|V_R| = \sqrt{(-8.34)^2 + (11.86)^2}$$

$$|V_R| = 14.49$$

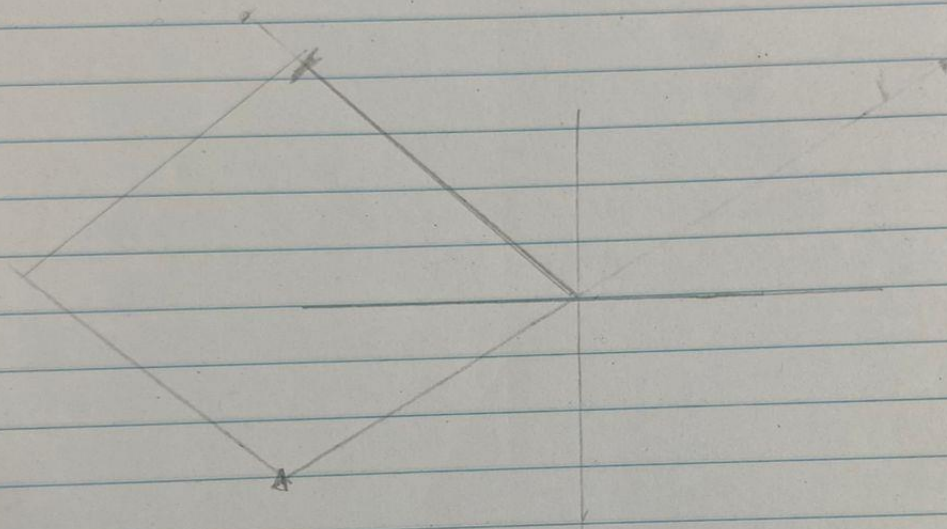
$$\alpha = \tan^{-1} \frac{V_{Ry}}{V_{Rx}}$$

$$\alpha = 10.21$$

$$V_R = V_2 - V_1$$

$$V_1 = 5 \text{ cm } 30^\circ$$

$$V_2 = 9 \text{ cm } 150^\circ$$



$$V_{1x} = 5 \cos 210$$

$$V_{1x} = -4.33$$

$$V_{1y} = 5 \sin 210$$

$$V_{1y} = -2.5$$

$$V_{2x} = 9 \cos 150$$

$$V_{2x} = -4.33$$

$$V_{2y} = 9 \sin 150$$

$$V_{2y} = 4.5$$

$$V_x = -4.33 + -4.33$$

$$V_x = -8.66$$

$$V_y = -2.5 + 4.5$$

0

$$\sqrt{(-8.66)^2 + (0)^2}$$

$$V_R = 0$$

$$\tan^{-1} = \frac{y}{x} = \frac{0}{-8.66}$$

0

$$V_R = 0$$

$$v_1 = 10 \text{ m/s} \quad v_2 = 5 \text{ cm} \text{ @ } 110^\circ$$

$$v_{1x} = 10 \cos 45^\circ$$

$$v_{1x} = 7.07$$

$$v_{1y} = 10 \sin 45^\circ$$

$$v_{1y} = 7.07$$

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

$$v_{2x} = -1.71$$

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

$$v_{2y} = 4.69$$

$$v_x = 7.07 + (-1.71)$$

$$v_x = 5.36$$

$$v_y = 7.07 + 4.69$$

$$v_y = 11.76$$

$$\sqrt{(5.36)^2 + (11.76)^2}$$

$$12.92$$

$$\theta = \tan^{-1} \frac{v_y}{v_x} = \frac{11.76}{5.36}$$

$$65.49^\circ$$