

UDS

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Nombre de la asignatura: Física

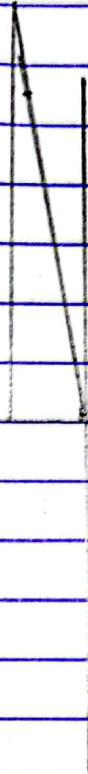
Nombre del alumno: Michelle Andres Gamboa Lopez

Nombre del trabajo: Problemario

Unidad: II Grupo: B111 Grado: 4º

Fecha: sabado 15 oct 2022

Sea un vector de 5 cm con un ángulo de 100° grados, calcular las respectivas componentes en los ejes X, Y.



$$V_x = -1 \text{ cm}$$

$$V_y = 4.9 \text{ cm}$$

$$V_x = V \cos \alpha$$

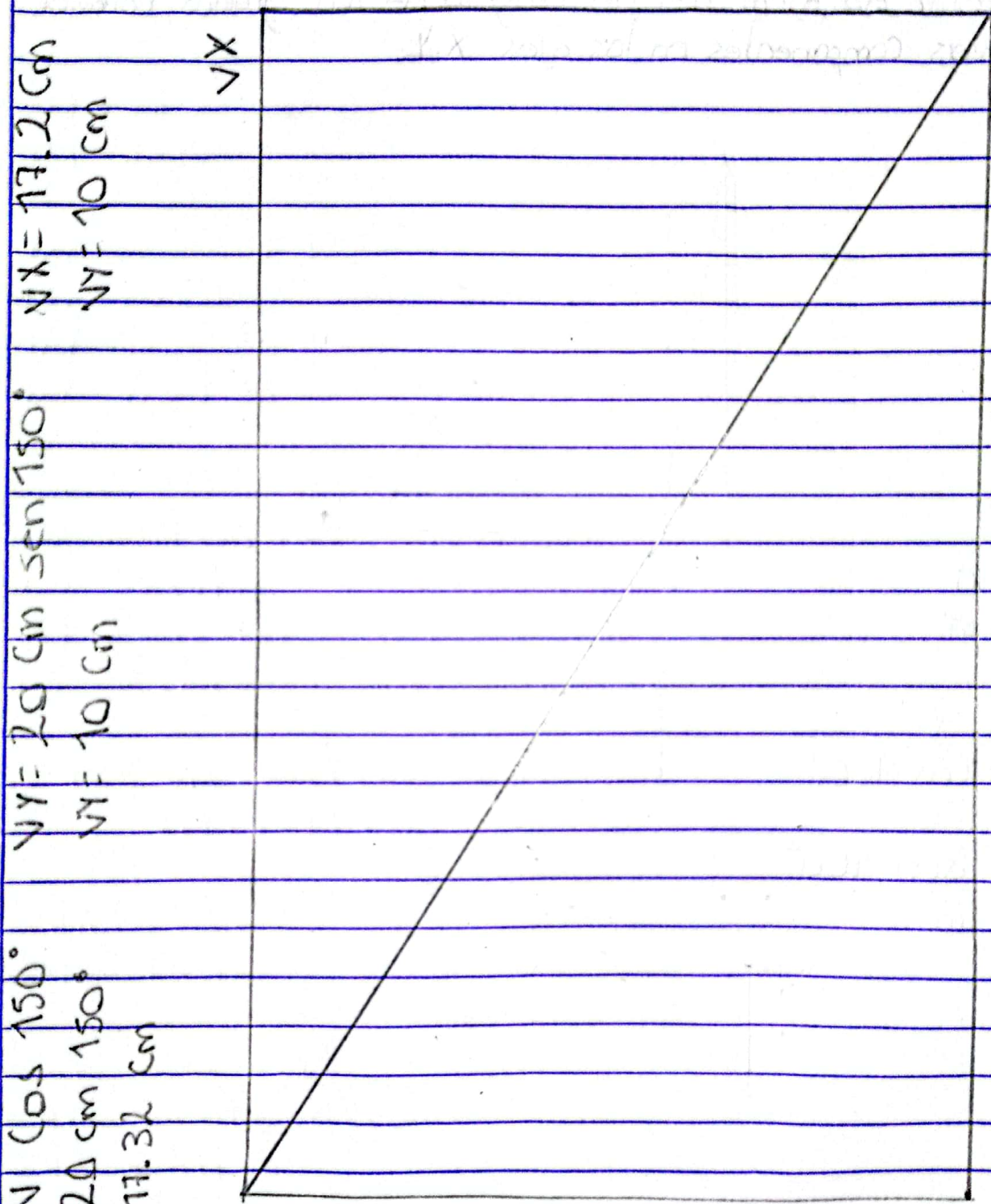
$$V_x = 5 \text{ cm} \cos 100^\circ$$

$$V_x = 0.8 \text{ cm}$$

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

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

Sea un vector de 20 cm con ángulo de 150° . Calcula las respectivas componentes en los ejes X, Y



$$V_x = V \cos 150^\circ$$
$$V_x = 20 \text{ cm} \cos 150^\circ$$
$$V_x = 17.32 \text{ cm}$$

$$V_y = 20 \text{ cm} \sin 150^\circ$$
$$V_y = 10 \text{ cm}$$

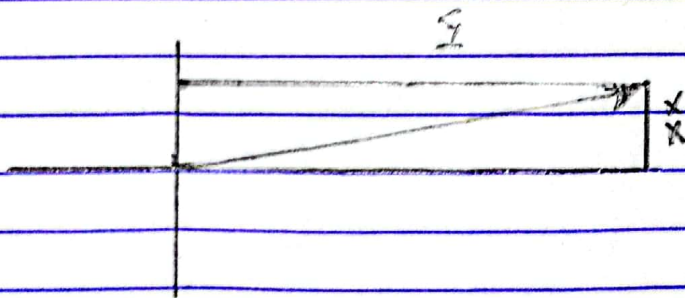
$$V_x = 17.32 \text{ cm}$$
$$V_y = 10 \text{ cm}$$

$$V_x = 17.32 \text{ cm}$$
$$V_y = 10 \text{ cm}$$

V

Sea un vector de 25 cm con un ángulo de 280° , calcular las respectivas componentes en los ejes X, Y

$$\begin{aligned}V_x &= 25 \cos 180^\circ \\V_x &= -24.61 \text{ cm} \\V_y &= 25 \sin 180^\circ \\V_y &= -24.61 \text{ cm}\end{aligned}$$



$$V_1 = 10 \text{ cm} \times 85^\circ \quad V_2 = 5 \text{ cm} \times 110^\circ \quad V_3 = 8 \text{ cm} \times 200^\circ$$

$$V_{1x} = 10 \text{ cm} \cos 85^\circ$$

$$V_{1x} = 0.87$$

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

$$V_{1y} = 9.96$$

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

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

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

$$V_{2y} = 4.69 \text{ cm}$$

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

$$V_{3x} = -2.51$$

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

$$V_{3y} = -2.73$$

$$\Sigma V_x = V_{1x} + V_{2x} + V_{3x}$$

$$\Sigma V_y = V_{1y} + V_{2y} + V_{3y}$$

$$\Sigma V_x = -8.35$$

$$\Sigma V_y = 11.92$$

$$\Sigma V_R = \sqrt{V_x^2 + V_y^2}$$

$$\Sigma V_R = \sqrt{69.72 + 142.08}$$

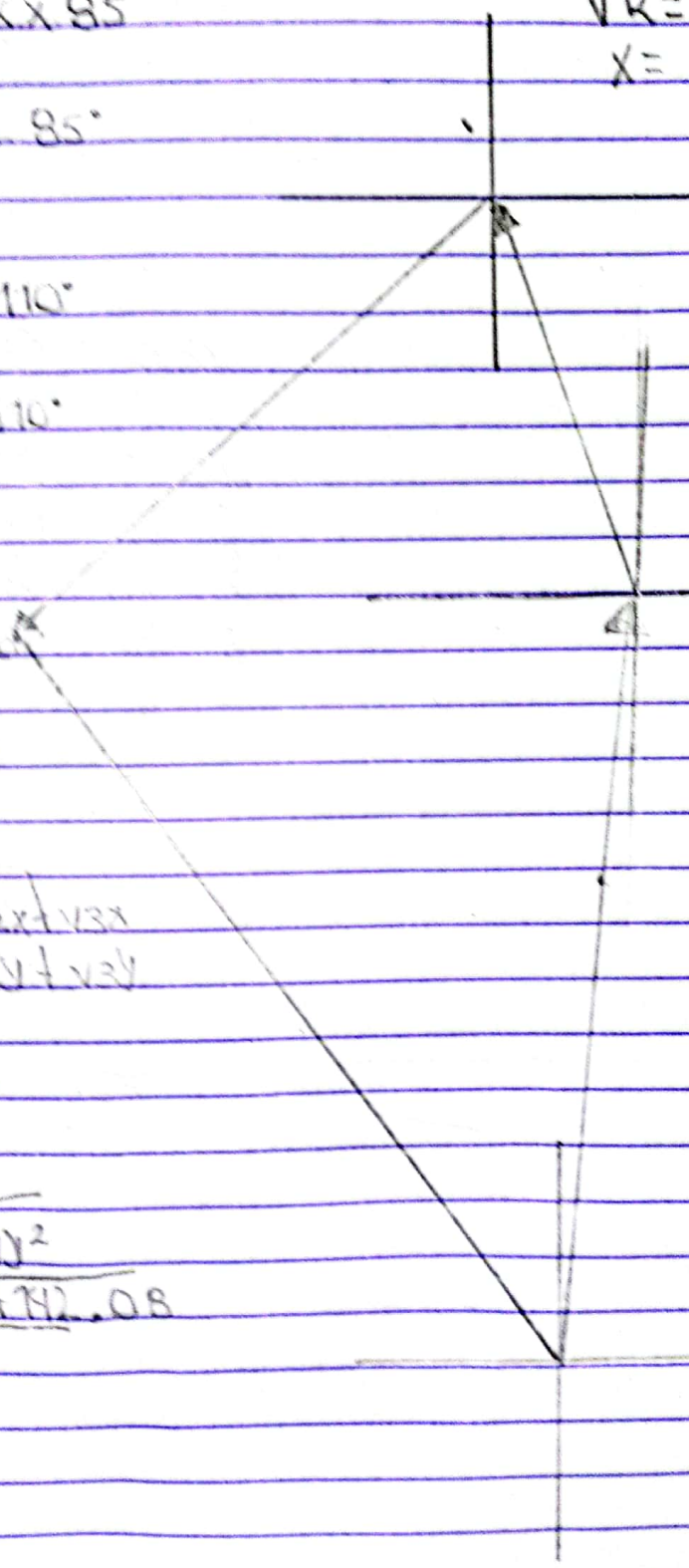
$$\Sigma V_R = \sqrt{211.8}$$

$$\Sigma V_R = 14.55$$

$$\alpha = -54.98$$

$$V_R = 11.8 \text{ cm}$$

$$\alpha = -53^\circ$$



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

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

$$V_{1x} = 7.07$$

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

$$V_{1y} = 7.07$$

$$V_{2x} = 15 \cos 100^\circ$$

$$V_{2x} = -2.60$$

$$V_{2y} = 15 \sin 100^\circ$$

$$V_{2y} = 14.77$$

$$V_{3x} = 8 \cos 210^\circ$$

$$V_{3x} = 6.92$$

$$V_{3y} = 8 \sin 210^\circ$$

$$V_{3y} = -4$$

$$\Sigma V_x = V_{1x} + V_{2x} + V_{3x}$$

$$\Sigma V_y = V_{1y} + V_{2y} + V_{3y}$$

$$\Sigma V_x = -2.45$$

$$\Sigma V_y = 77.94$$

$$V_R = \sqrt{V_x^2 + V_y^2}$$

$$V_R = \sqrt{6.00 + 3.18.26}$$

$$V_R = \sqrt{324.26}$$

$$V_R = 18.00$$

$$\alpha = 82.18$$

$$V_1 = 10 \text{ cm} \times 45^\circ \quad V_2 = 5 \text{ cm} \times 110^\circ$$

$$V_{1x} = 10 \text{ cm} \cos 45^\circ$$

$$V_{1x} = 7.07$$

$$V_{1y} = 10 \text{ cm} \sin 45^\circ$$

$$V_{1y} = 7.07$$

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

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

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

$$V_{2y} = -4.69$$

$$\Sigma V_x = V_{1x} + V_{2x}$$

$$\Sigma V_y = V_{1y} + V_{2y}$$

$$\Sigma V_x = 8.78$$

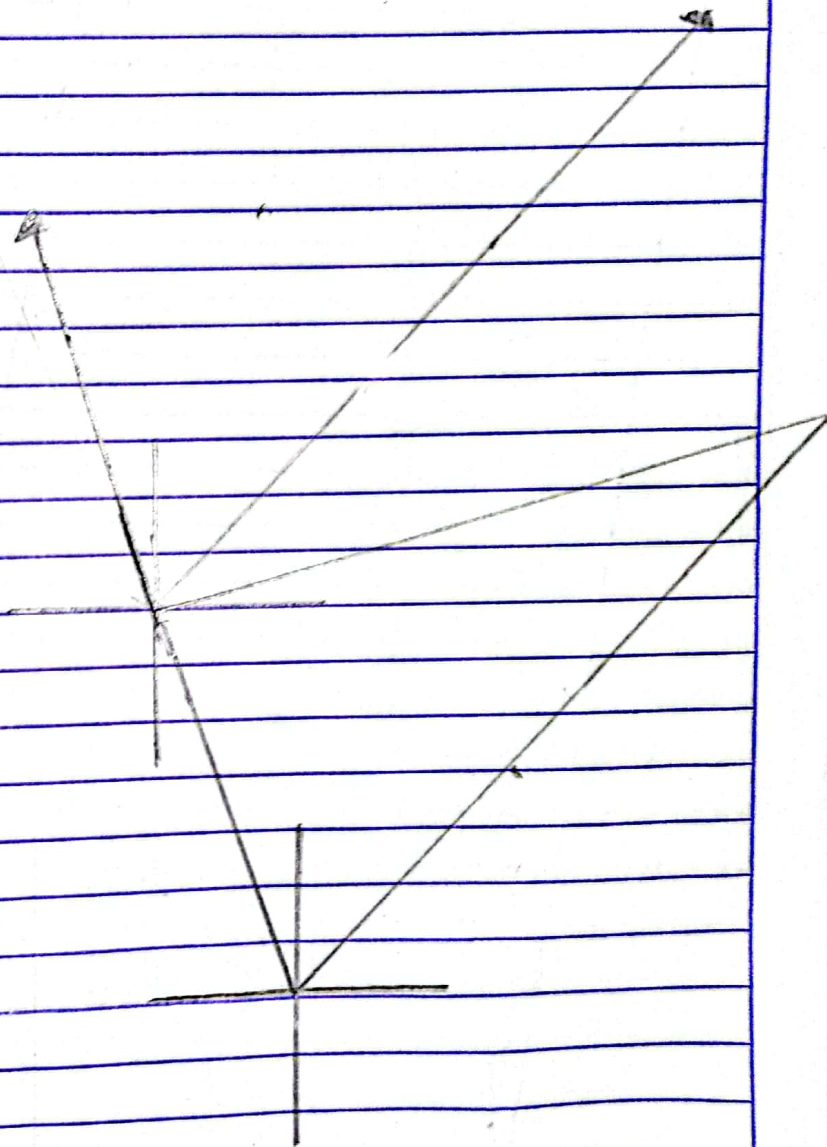
$$\Sigma V_y = 2.38$$

$$V_R = \sqrt{V_x^2 + V_y^2}$$

$$V_R = \sqrt{77.08 + 5.66}$$

$$V_R = 9.09$$

$$\alpha = 15.16$$



$$V_1 = 5 \text{ cm} \times 30^\circ \quad V_2 = 5 \text{ cm} \times 150^\circ \quad V_R = V_2 - V_1$$

$$V_R = 8.8 \text{ cm}$$

$$\alpha = 0^\circ$$

$$V_{1x} = 5 \text{ cm} \cos 210^\circ$$

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

$$V_{1y} = 5 \text{ cm} \sin 210^\circ$$

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

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

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

$$V_{2y} = 2.5$$

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

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

$$V_{2y} = 2.5$$

$$\sum V_x = V_{1x} + V_{2x}$$

$$\sum V_y = V_{1y} + V_{2y}$$

$$\sum V_x = -8.66$$

$$\sum V_y = 0$$

$$V_R = \sqrt{V_x^2 + V_y^2}$$

$$V_R = \sqrt{74.9970}$$

$$V_R = \sqrt{74.99}$$

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

$$\alpha = 0$$

