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Materia:
fisica

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Cuatrimestre:
4

Fecha:
11/10/2024

Plataforma

$V_1 = 5 \text{ cm} \angle 100^\circ$
 $\text{Sen} \alpha = \frac{c.o}{H.P} = 1.0 = H.P \text{ Sen}$

$V_x = V \cos \alpha$

$V_y = V \text{ Sen} \alpha$

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

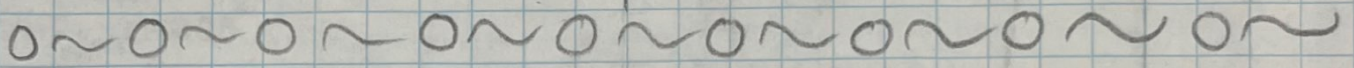
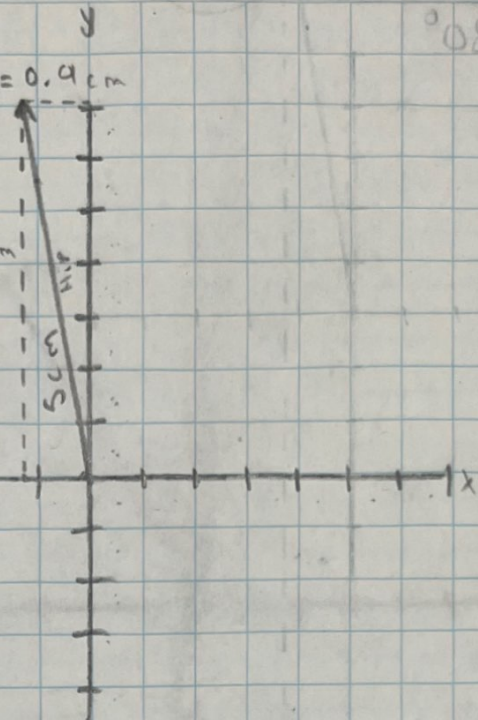
$V_x = -0.86$

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

$V_y = -4.92$

$V_y = 0.9 \text{ cm}$

$V_x = -5 \text{ cm}$



$-17.5 = V_x$

$V_1 = 20 \text{ cm} \angle 150^\circ$

$V_x = V \cos \alpha$

$V_y = V \text{ Sen} \alpha$

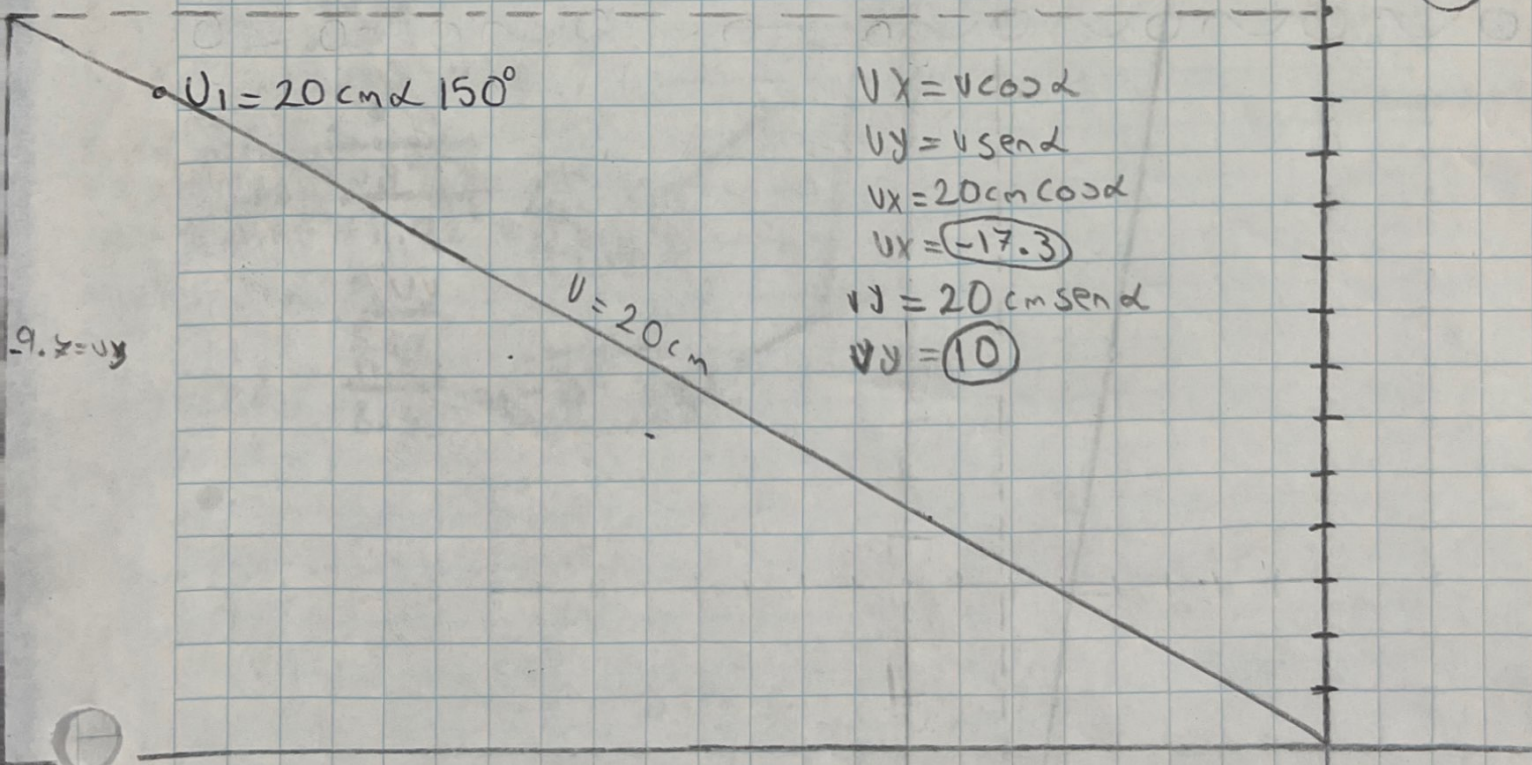
$V_x = 20 \text{ cm} \cos \alpha$

$V_x = -17.3$

$V_y = 20 \text{ cm} \text{ Sen} \alpha$

$V_y = 10$

$V = 20 \text{ cm}$



3

$$V_1 = 25 \text{ cm} \angle 280^\circ$$

$$V_x = 25 \cos 280$$

$$V_x = 4.34$$

$$V_y = 25 \sin 280$$

$$V_y = -24.62$$

24.4

4.2

4

$$\begin{aligned}
 v_1 &= 10 \text{ cm} \angle 85^\circ \\
 v_2 &= 5 \text{ cm} \angle 110^\circ \\
 v_3 &= 8 \text{ cm} \angle 200^\circ
 \end{aligned}$$

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

$$v_{1x} = 0.87$$

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

$$v_{1y} = 9.96$$

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

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

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

$$v_{2y} = 4.69$$

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

$$v_{3x} = -7.51$$

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

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

$$\sum v_x = v_{1x} + v_{2x} + v_{3x}$$

$$\sum v_x = -8.35$$

$$\sum v_y = v_{1y} + v_{2y} + v_{3y}$$

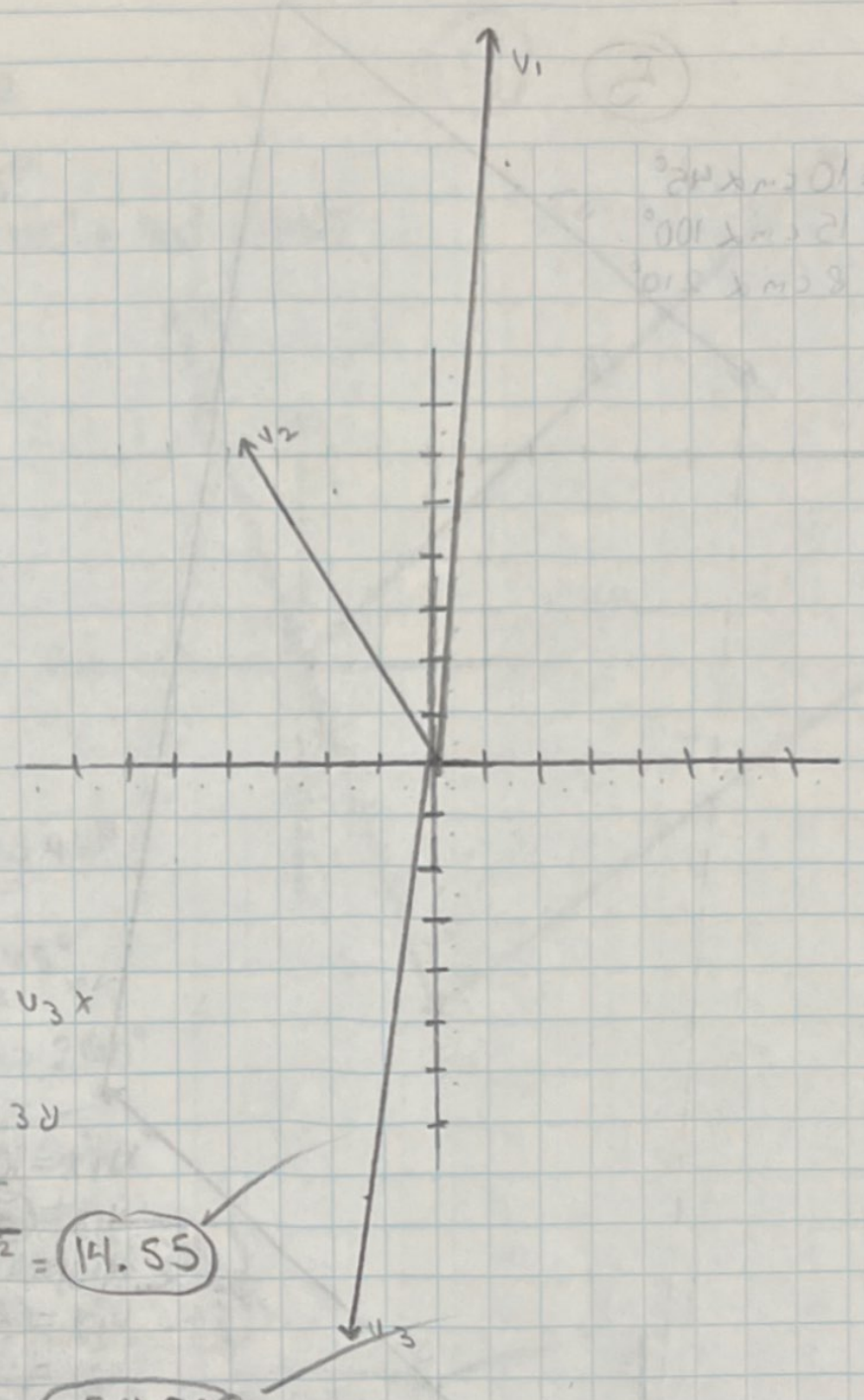
$$\sum v_y = 11.92$$

$$v_R = \sqrt{\sum v_x^2 + \sum v_y^2}$$

$$v_R = \sqrt{8.35^2 + 11.92^2} = 14.55$$

$$\angle v_R = \tan^{-1} \frac{\sum v_y}{\sum v_x}$$

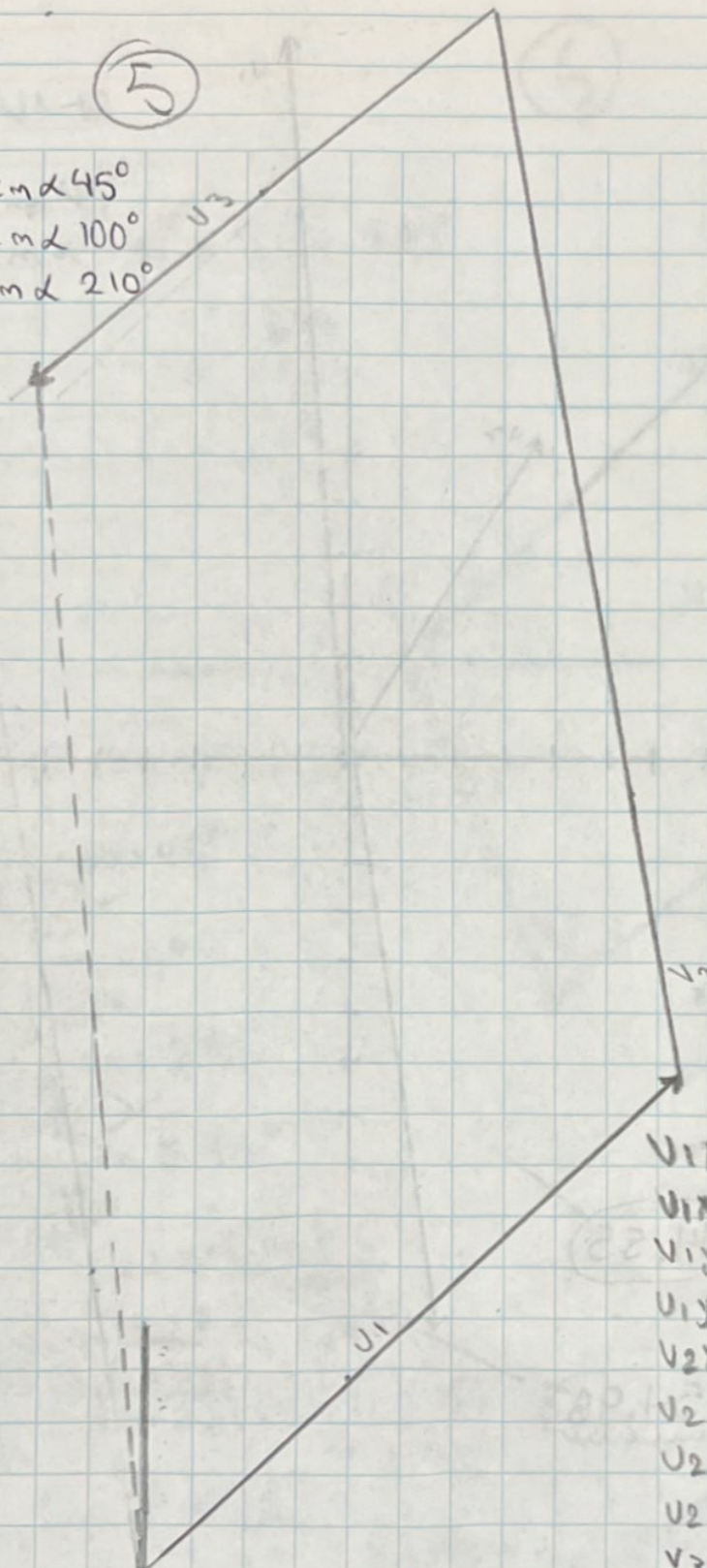
$$\angle v_R = \tan^{-1} \frac{11.92}{-8.35} = -54.98^\circ$$



$10 \times \cos 85^\circ = 0.87$
 $10 \times \sin 85^\circ = 9.96$
 $5 \times \cos 110^\circ = -1.71$
 $5 \times \sin 110^\circ = 4.69$
 $8 \times \cos 200^\circ = -7.51$
 $8 \times \sin 200^\circ = -2.73$

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



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

$$V_{1x} = 7.07$$

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

$$V_{1y} = 7.07$$

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

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

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

$$V_{2y} = 14.77$$

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

$$V_{3x} = -6.92$$

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

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

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

$$\sum V_x = -2.45$$

$$\sum V_y = V_{1y} + V_{2y} + V_{3y} = 17.84$$

$$V_R = \sqrt{\sum V_x^2 + \sum V_y^2} = 18$$

$$\angle V_R = \tan^{-1} \frac{\sum V_y}{\sum V_x} = -82.18$$

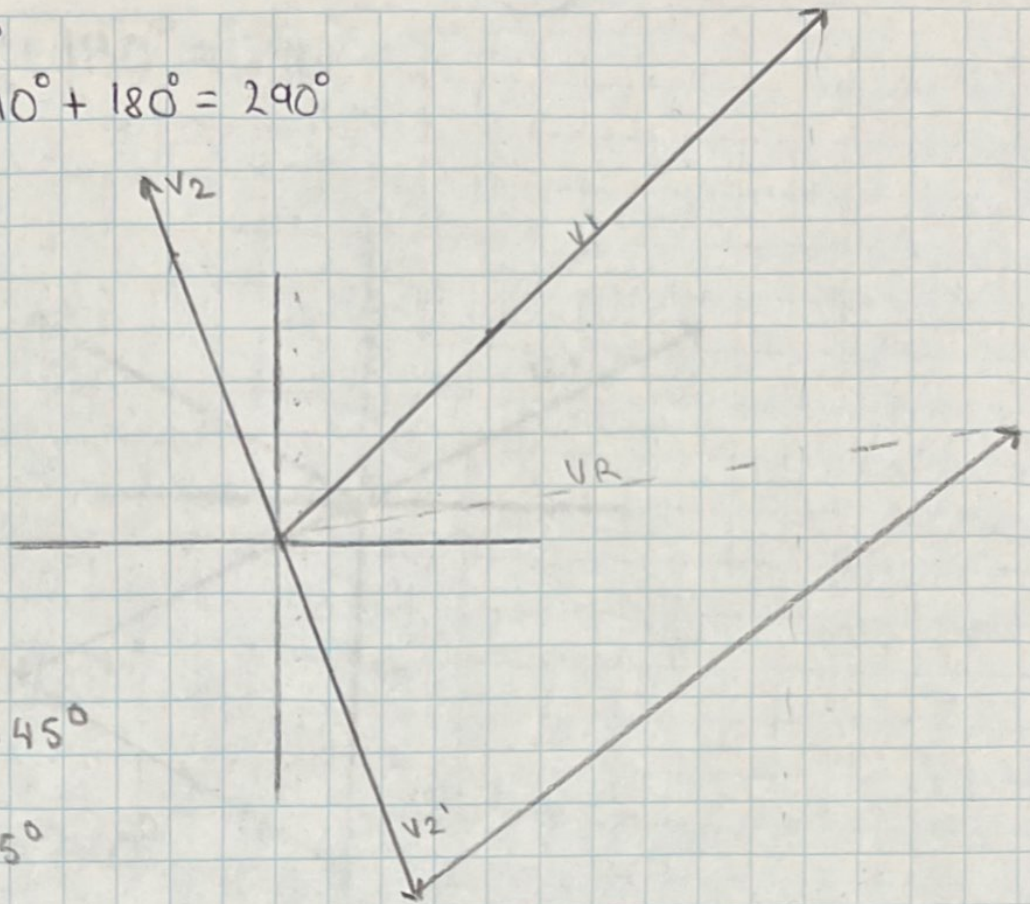
$28 \times \sin 31 = 10$
 $11 \times \sin 110 = 10$
 $10 \times \sin 50 = 8$

V1-V2

(6)

$$V_1 = 10 \text{ cm} \angle 45^\circ$$

$$V_2 = 5 \text{ cm} \angle 110^\circ + 180^\circ = 290^\circ$$



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

$$V_{1x} = 7.07$$

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

$$V_{1y} = 7.07$$

$$V_{2x} = 5 \text{ cm} \cos 290^\circ$$

$$V_{2x} = 1.71$$

$$V_{2y} = 5 \text{ cm} \sin 290^\circ$$

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

$$\Sigma V_x = V_{1x} + V_{2x} = 8.78$$

$$\Sigma V_y = V_{1y} + V_{2y} = 2.38$$

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

$$V_R = \sqrt{8.78^2 + 2.38^2} = 9.09$$

$$\angle V_R = \tan^{-1} \frac{\Sigma V_y}{\Sigma V_x}$$

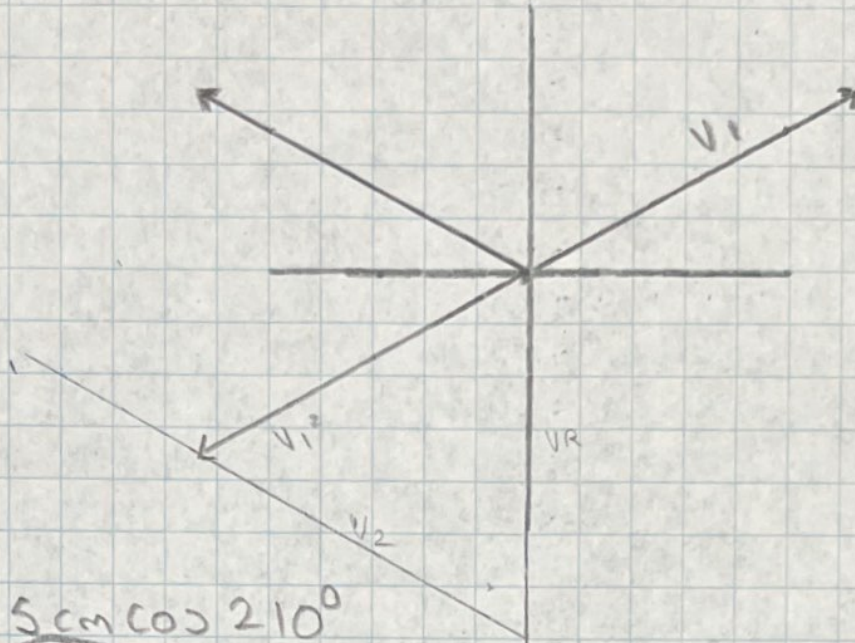
$$\angle V_R = \tan^{-1} \frac{2.38}{8.78} = 15.22$$

$$V_R = V_2 - V_1$$

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$$V_1 = 15 \text{ cm } 30^\circ + 180^\circ = 210^\circ$$

$$V_2 = 5 \text{ cm } 150^\circ$$



$$V_{1x} = 15 \text{ cm } \cos 210^\circ$$

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

$$V_{1y} = 15 \text{ cm } \sin 210^\circ$$

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

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

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

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

$$V_{2y} = 2.5$$

$$\Sigma V_x = V_{1x} + V_{2x} = -8.6$$

$$\Sigma V_y = V_{1y} + V_{2y} = -5$$

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

$$V_R = \sqrt{8.6^2 + 5^2} = 9.94$$

$$\alpha_{V_R} = \tan^{-1} \frac{\Sigma V_y}{\Sigma V_x} = \frac{-5}{-8.6} = 30.17^\circ$$