

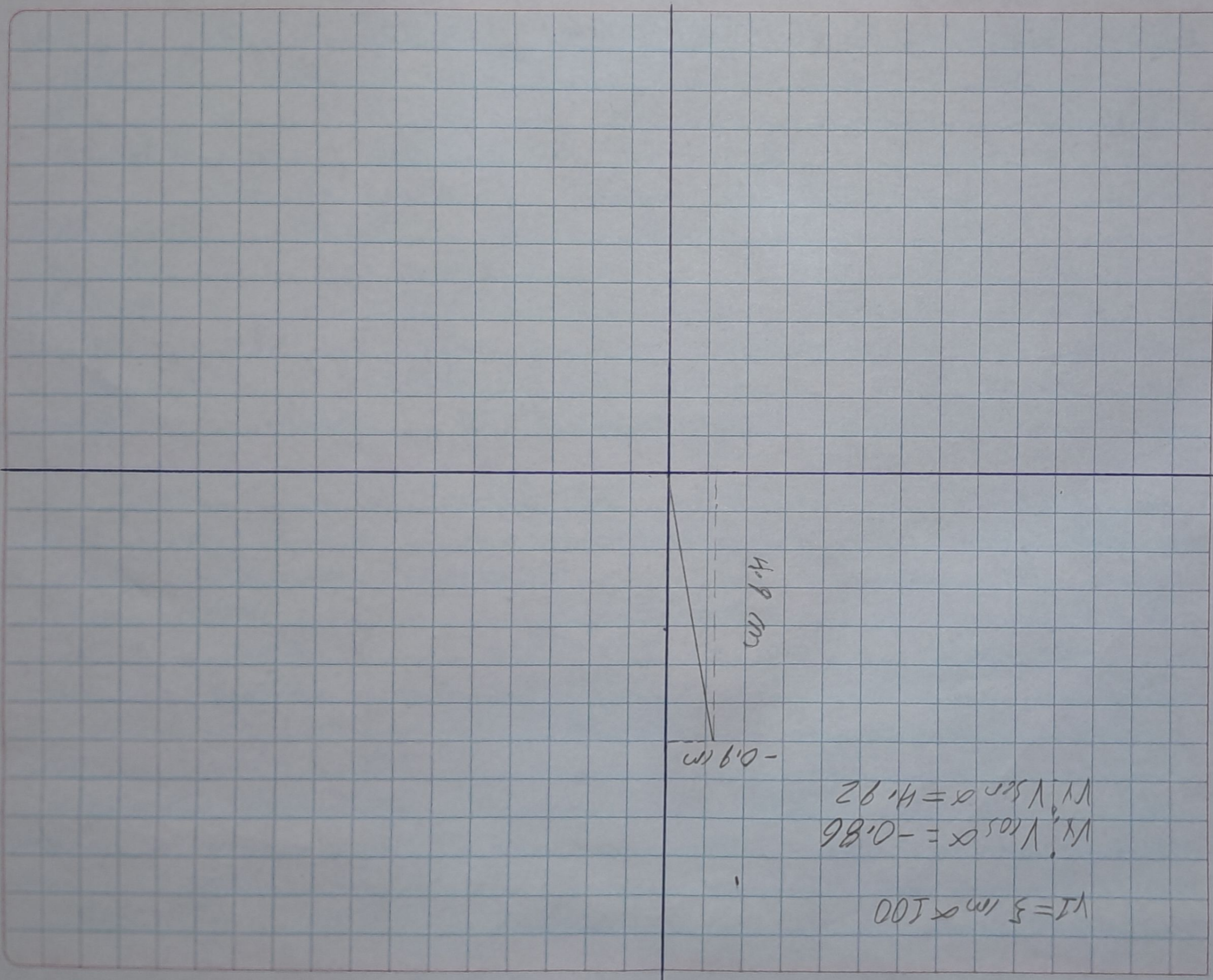
$$V_I = 5 \text{ m} \times 100$$

$$V_X; V_{cos} \alpha = -0.86$$

$$V_Y; V_{sen} \alpha = 4.92$$

-0.9 m

4.9 m

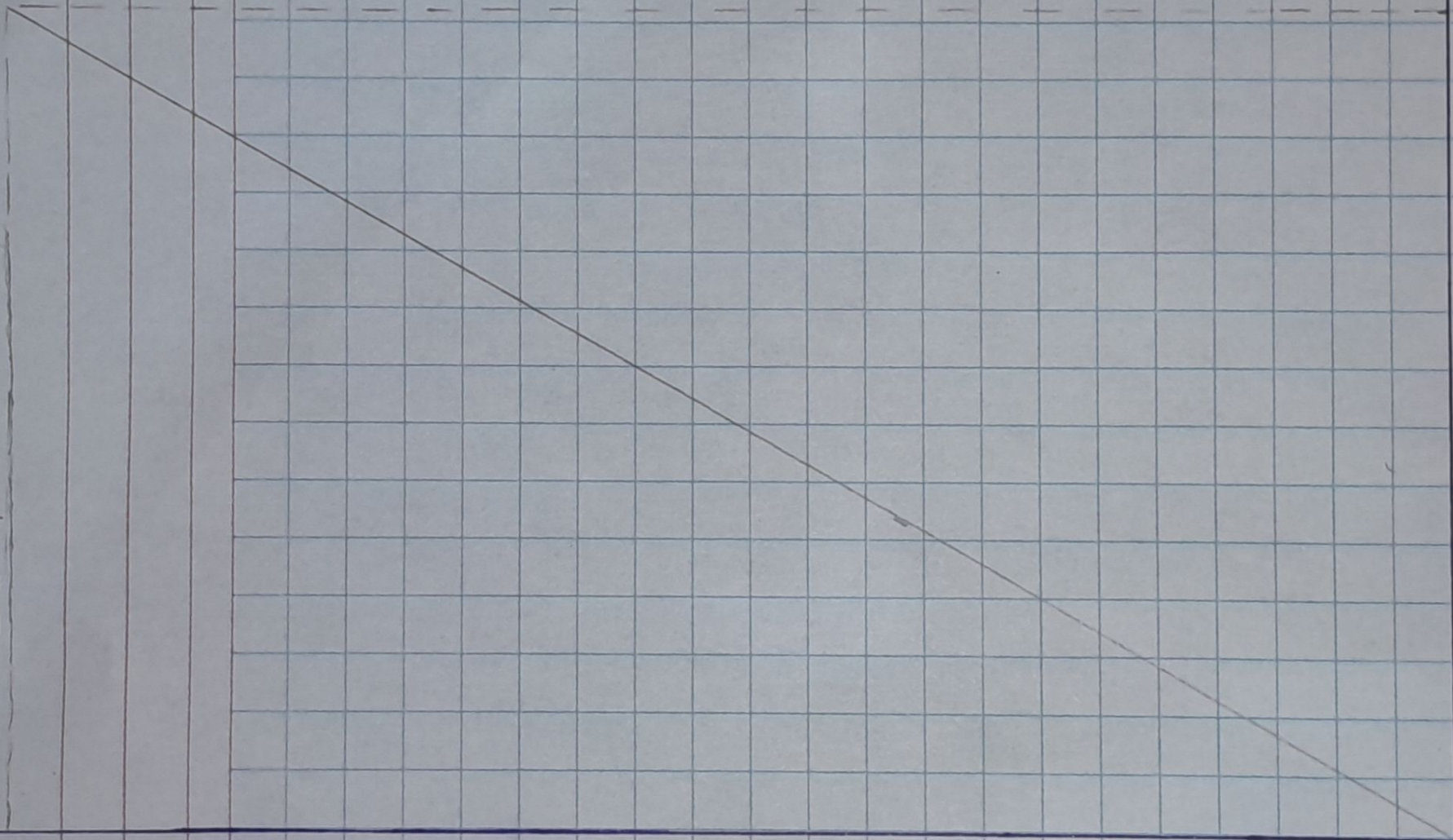


$$V = 20 \text{ m} \angle 130^\circ$$

$$V_x = V \cos \alpha = -14.32 \text{ m}$$

$$V_y = V \sin \alpha = 10 \text{ m} \quad -17.42 \text{ m}$$

10 m



$$V = 25 \text{ m} \angle 290^\circ$$

$$V_x = V \cos \alpha = 4.341$$

$$V_y = V \sin \alpha = -24.67$$

$$-24.7 \text{ m}$$

$$4.3 \text{ m}$$

$V_1 = 10 \text{ m} \times 85$
 $V_2 = 5 \text{ m} \times 110$
 $V_3 = 8 \text{ m} \times 200$

$V_1 = V_{105} \times 1$
 $V_2 = 0.87$
 $V_3 = V_{100} \times 1$

$V_1 = V_{105} \times 1$
 $V_2 = 2.71$

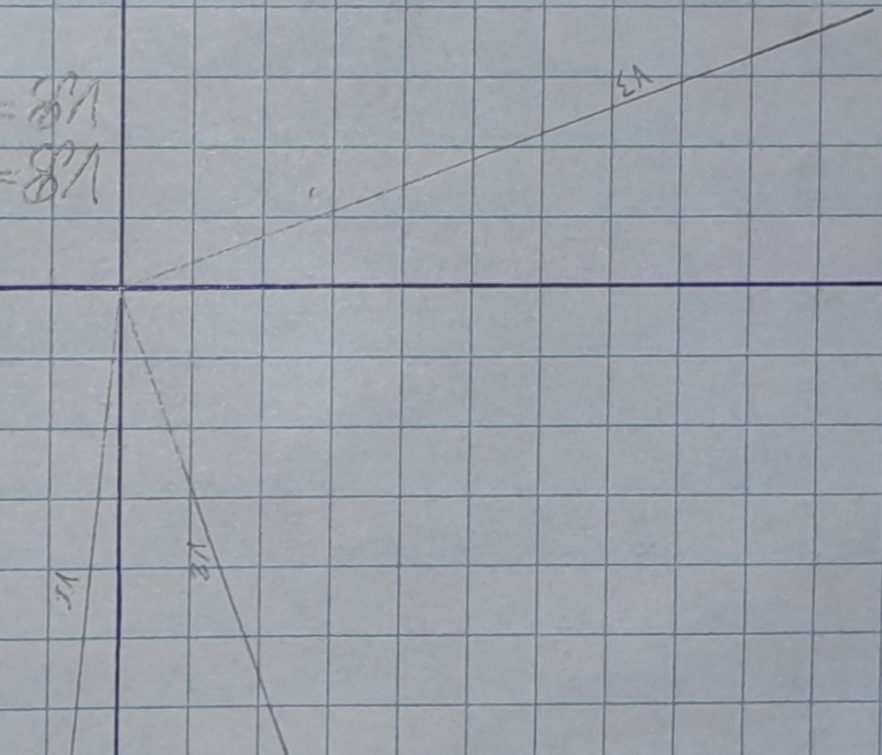
$V_1 = V_{105} \times 1$
 $V_2 = 4.69$

$V_1 = V_{105} \times 1$
 $V_2 = 7.51$
 $V_3 = V_{100} \times 1$
 $V_4 = 8.73$

$V_1 = V_{105} \times 1$
 $V_2 = 8.35$

$V_1 = V_{105} \times 1$
 $V_2 = 1.92$

$V_1 = V_{105} \times 1$
 $V_2 = 1.55$
 $V_3 = 5.4$
 $V_4 = 5.4$



$$V_1 = 10 \text{ m} \times 45^\circ$$

$$V_2 = 15 \text{ m} \times 100^\circ$$

$$V_3 = 8 \text{ m} \times 210^\circ$$

$$V_{1x} = V_1 \cos \alpha \quad V_B = \sqrt{\sum V_x^2 + \sum V_y^2}$$

$$V_{1x} = 7.07 \quad V_B = 18.00 \text{ (m)}$$

$$V_{1y} = V_1 \sin \alpha$$

$$V_{1y} = 7.07 \quad \alpha V_B = \tan^{-1} \frac{\sum V_y}{\sum V_x}$$

$$\alpha V_B = -82^\circ$$

$$V_{2x} = V_2 \cos \alpha$$

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

$$V_{2y} = V_2 \sin \alpha$$

$$V_{2y} = 14.97$$

$$V_{3x} = V_3 \cos \alpha$$

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

$$V_{3y} = V_3 \sin \alpha$$

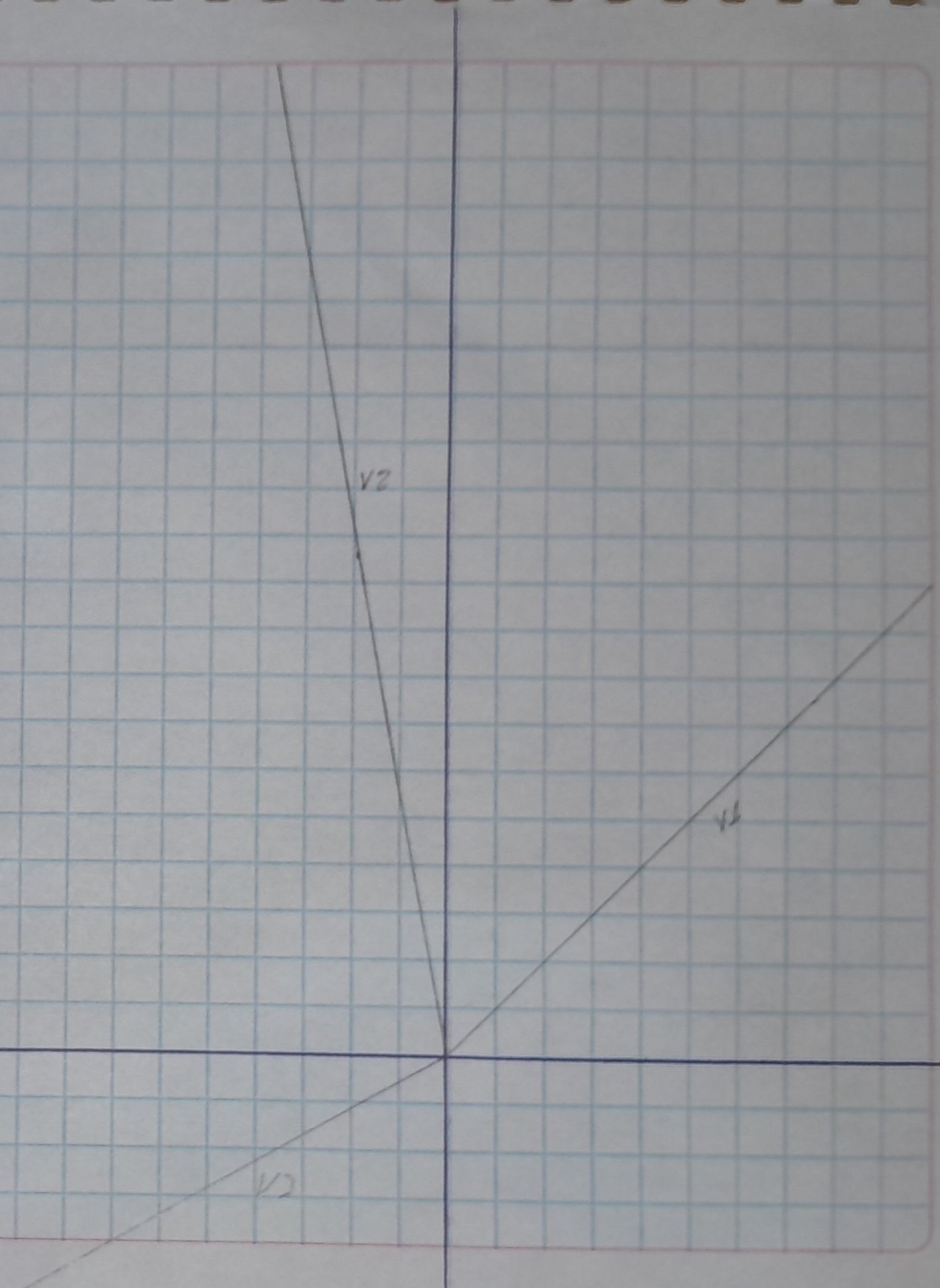
$$V_{3y} = 4$$

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

$$\sum V_x = -3.45$$

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

$$\sum V_y = 17.84$$



$$V_1 = 10 \text{ m } \alpha 45^\circ$$

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

$$V_{1x} = V_1 \cos \alpha$$

$$V_{1x} = 7.07$$

$$V_{1y} = V_1 \sin \alpha$$

$$V_{1y} = 7.07$$

$$V_{2x} = V_2 \cos \alpha$$

$$V_{2x} = 1.71$$

$$V_{2y} = V_2 \sin \alpha$$

$$V_{2y} = -4.09$$

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

$$\Sigma V_x = 8.78$$

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

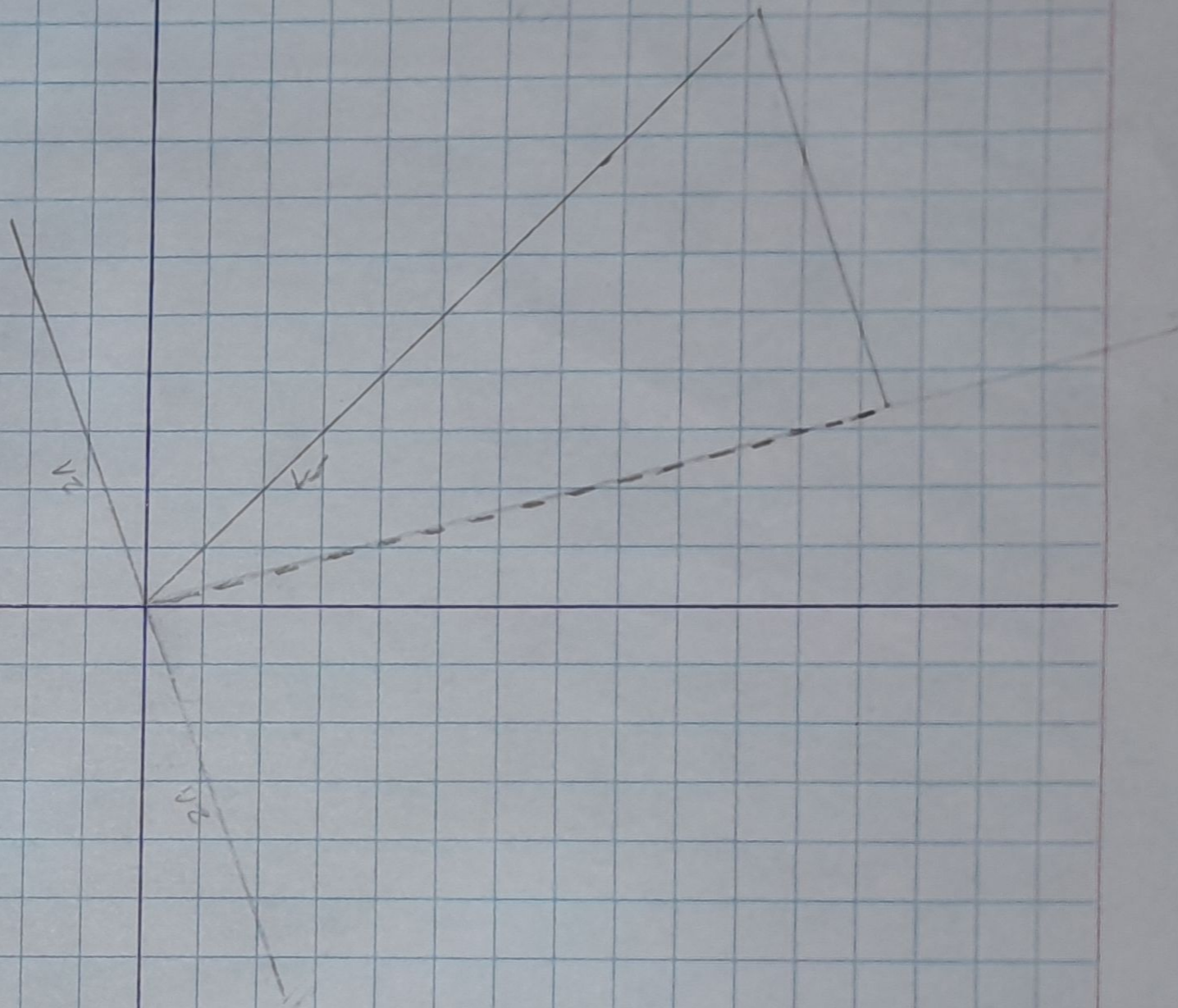
$$\Sigma V_y = 2.98$$

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

$$V_R = 9.096 \text{ m}$$

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

$$\alpha V_R = 15^\circ$$



$$V_1 = 5 \text{ m} \angle 30^\circ + 100 + 210^\circ$$

$$V_2 = 5 \text{ m} \angle 150^\circ$$

$$V_{1x} = V_1 \cos \alpha$$

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

$$V_{1y} = V_1 \sin \alpha$$

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

$$V_{2x} = V_2 \cos \alpha$$

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

$$V_{2y} = V_2 \sin \alpha$$

$$V_{2y} = 2.5$$

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

$$\Sigma V_x = -8.66$$

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

$$\Sigma V_y = -1$$

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

$$V_B = 8.66 \text{ m}$$

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

$$\alpha = 6^\circ$$

