UDS

Nombre del docente
Juan Jose Ojeda Trujillo

Asignatura: Fisica

Nombre del Alumno: Daniel Ortiz Albores

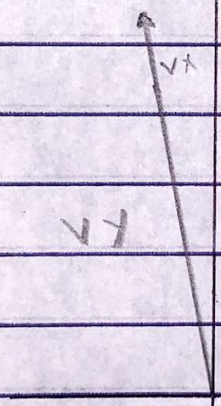
Nombre del trabajo: Problemario

Unidad: II Grupo = BRH Grado 4°

1 Sea un vector de 5cm con un Angulo de 100 grados, Calcula las respectivas Componentes en los ejes X, y

VX: -1cm
Vy: 5cm

VX: V cos α
VX: 5 cos 100
VX: -0.86
Vy: V sen α
Vy: 4.92 cm



2. Sea un vector de 20 cm con un angulo de 150° calcula las respectivas componentes en ds ejes X, y

$Vx = 17.5\,cm$

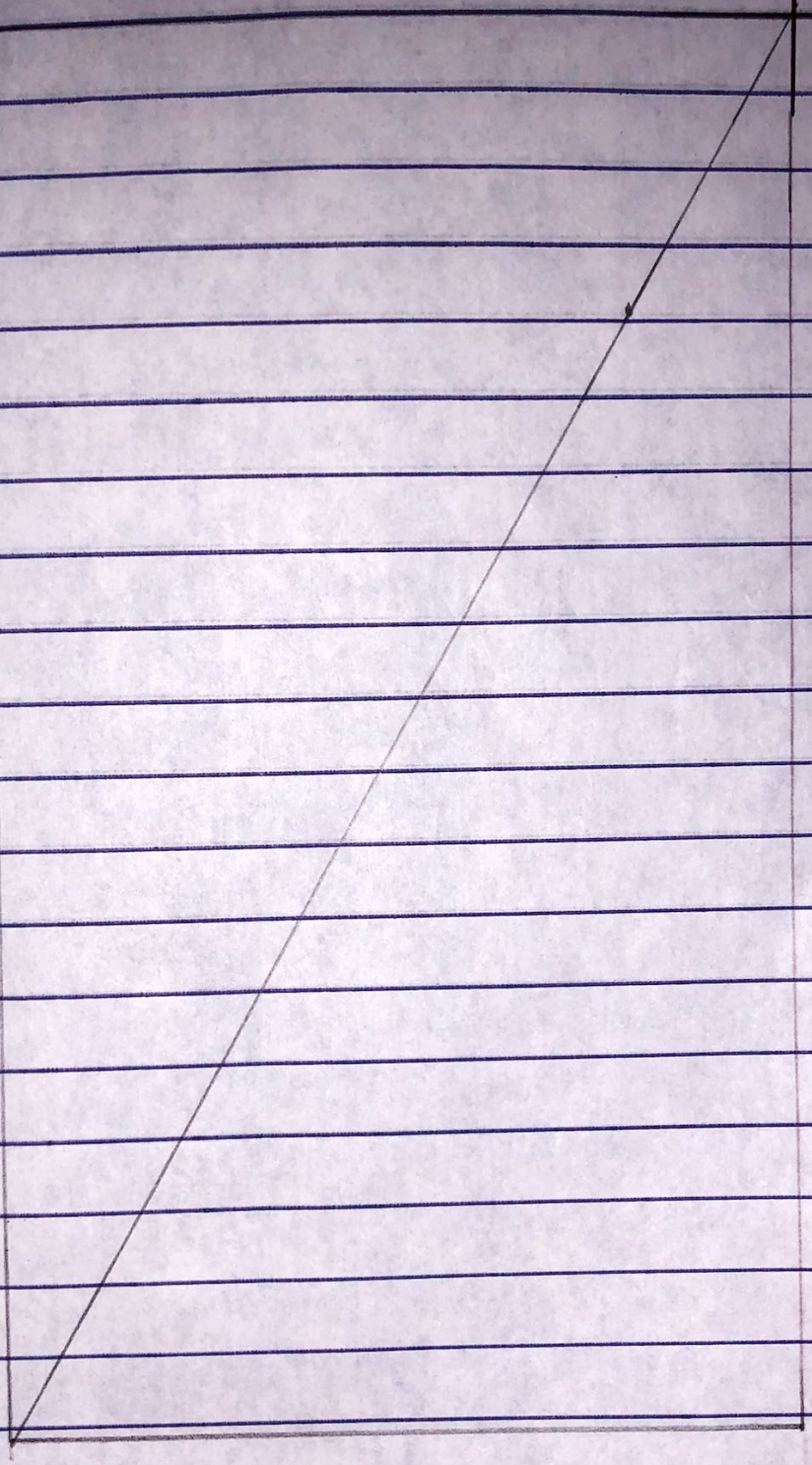
$Vy = 9.8\,cm$

$Vx = 20 \cos 150°$

$Vx = -17.32\,cm$

$Vy = 20 \operatorname{sen} 150°$

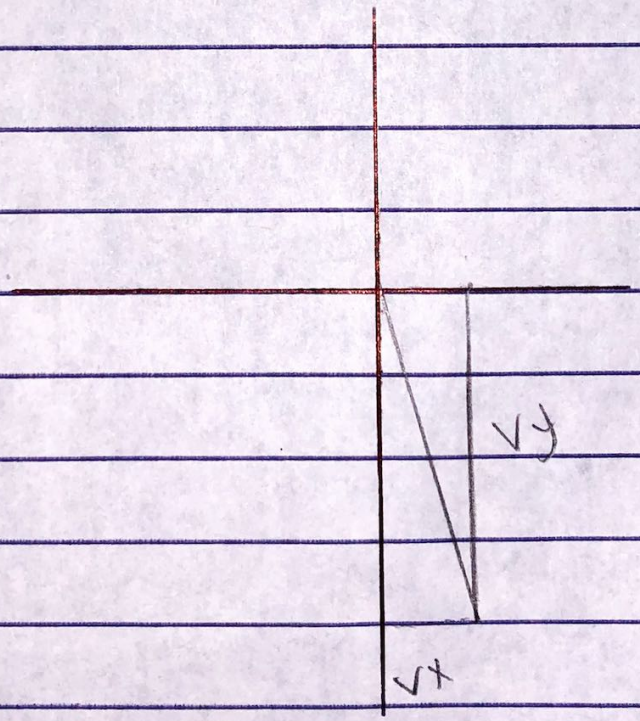
$Vy = 10\,cm$



3. Sea un vector de 25 cm con un Angulo de 280 grados calcula las respectivas componentes en os ejes x, y

$Vx = 25 \cos 280^\circ$ $Vy = 25 \operatorname{sen} 280$

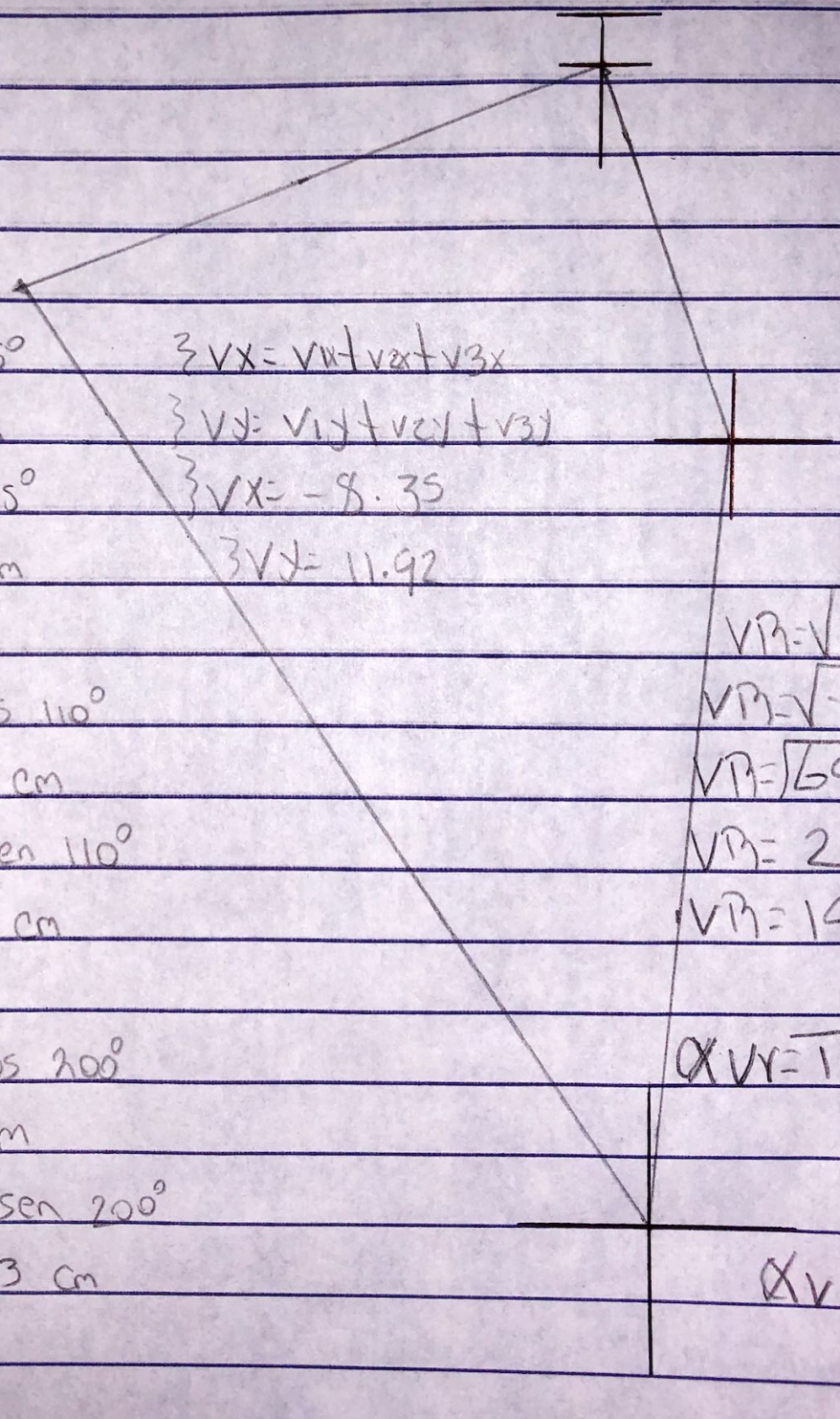
$Vx = 4.34$ cm $Vy = -24.62$ cm



4 $V1 = 10\,cm\ 85^\circ$ $V2 = 5cm\ 110^\circ$ $V3 = 8cm\ 200^\circ$

$VR = 14.75$

$\alpha VR = -54$



$V1x = 10 \cos 85^\circ$

$V1x = 0.87\,cm$

$V1y = 10\ sen\ 85^\circ$

$V1x = 9.96\,cm$

$V2x = 5cm \cos 110^\circ$

$V2x = -1.71\,cm$

$V2y = 5\,cm\ sen\ 110^\circ$

$V2x = 4.69\,cm$

$V3x = 8cm \cos 200^\circ$

$V3x = -251\,cm$

$V3y = 8cm\ sen\ 200^\circ$

$V3y = -2.73\,cm$

$\begin{cases} VX = V1x + V2x + V3x \\ VY = V1y + V2y + V3y \\ VX = -8.35 \\ VY = 11.92 \end{cases}$

$VR = \sqrt{Vx^2 + Vy^2}$

$VR = \sqrt{-8.35 + 11.92}$

$VR = \sqrt{69.72 + 142.08}$

$VR = 211.8$

$VR = 14.55$

$\alpha VR = \tan^{-1} \frac{3VY}{3VX}$

$\alpha VR = 54.48$

$V1 = 10\ cm \quad 45°$
$V2 = 15\ cm \quad 100°$
$V3 = 8\ cm \quad 210°$

$Vr = 17.7\ cm$
$\alpha Vr = 82°$

$V1x = 10\ cm \cos 45°$
$V1x = 7.07$
$V1y = 10\ cm \operatorname{sen} 45°$
$V1y = 7.07$

$\sum Vx = V1x + V2x + V3x$
$\sum Vy = V1y + V2y + V3x$
$\sum Vx = -2.45\ cm$
$\sum Vy = 17.84\ cm$

$V2x = 15 \cos 100°$
$V2x = -2.60\ cm$
$V2y = 14.77\ cm$

$V3x = 8cm \cos 210$
$V3x = -6.92\ cm$
$V3y = 8 \operatorname{sen} 210$
$V3y = -4\ cm$

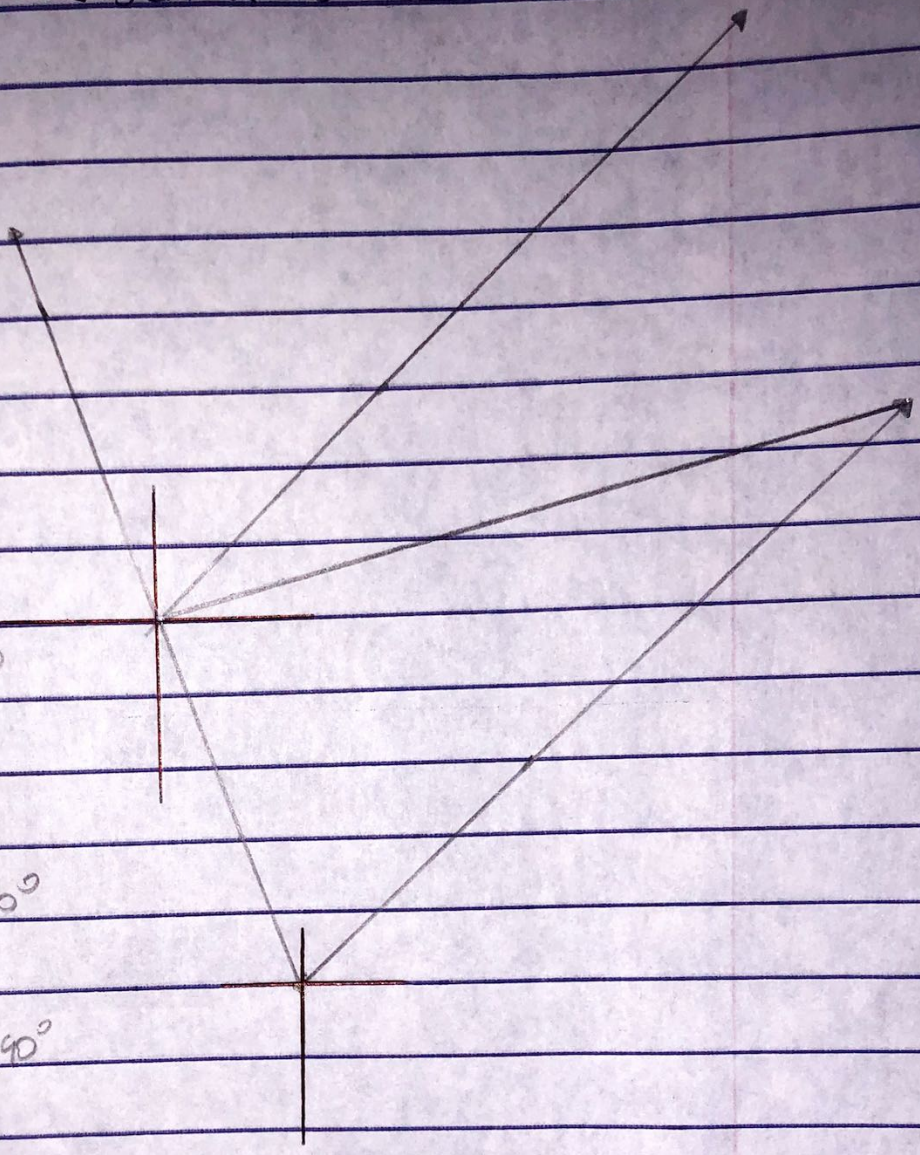
$Vr = \sqrt{Vx^2 + Vy^2}$
$Vr = -2.45 + 17.84\ cm$

$Vr = \sqrt{324.26}$
$Vr = 18\ cm$

$\alpha Vr = \text{Tan}^{-1} \frac{\sum Vy}{\sum Vx}$

$\alpha Vr = -82.18$

V_1 10 cm α 45° V_2 5cm α 110° $V_{vr} = V_1 - V_2$



$V_r = 9.3$

$\alpha_{vr} = 14°$

$V_{1x} = 10\text{cm} \cos 45°$

$V_{1x} = 7.07\text{ cm}$

$V_{1y} = 10\text{ cm sen } 45°$

$V_{1x} = 7.07\text{ cm}$

$V_{2x} = 5\text{cm} \cos 290°$

$V_{2x} = 1.71\text{ cm}$

$V_{2y} = 5\text{ cm sen } 290°$

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

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

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

$\Sigma V_x = 8.78$

$\Sigma V_y = 2.38$

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

$\alpha_{vr} = 15.36$

$V_r = \sqrt{77.08 + 5.66}$

$V_r = \sqrt{82.74}$

$V_r = 9.09\text{ cm}$

7. $V_1 = 5cm \ \alpha \ 30°$ $V_2 \ 5cm \ \alpha \ 150$ $V_r = V_2 - V_1$

$V_r = 8.7 \ cm$

$\alpha_{Vr} = 0°$

$V_{1x} = 5cm \cos 30°$

$V_{1x} = -4.33cm$

$V_{1y} = 5cm \ sen \ 30°$

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

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

$V_{2x} = -4.33$

$V_{2y} = 5cm \ sen \ 150$

$V_{2y} = 2.5$

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

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

$\sum V_x = -8.65$

$\sum V_y = 0$

$V_r \sqrt{-8.65^2 + 0^2}$

$V_r = \sqrt{74.94 + 0}$

$V_r \sqrt{8.65 \ cm}$

$\alpha_{Vr} = \tan^{-1} \frac{\sum V_y}{\sum V_x}$

$\alpha_{Vr} = 0$