



Mi Universidad

Actividad

Nombre del Alumno: Hector Elián Alejandro Villarreal

Nombre del tema: Sistema de Coordenadas

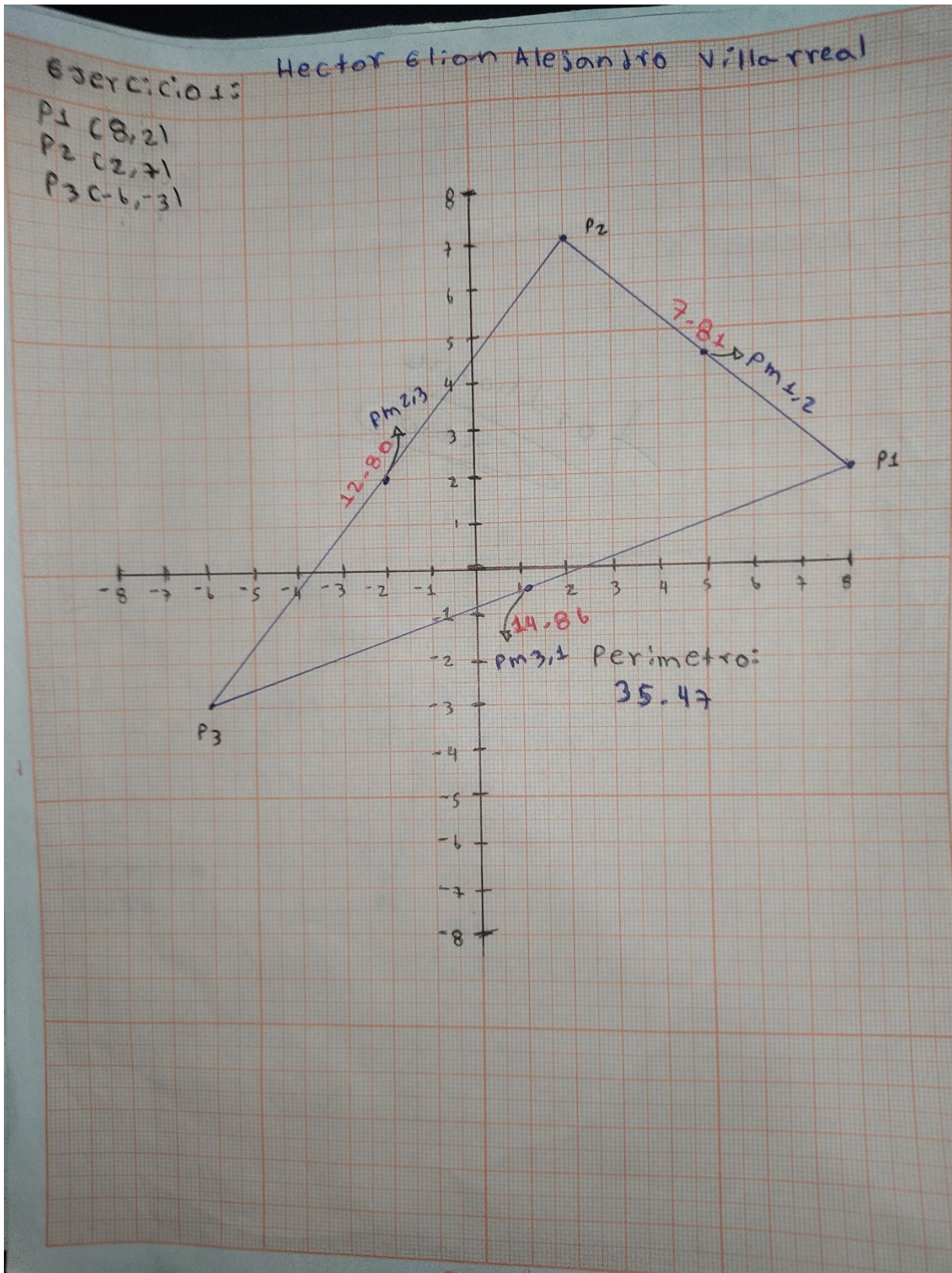
Parcial: 3

Nombre de la Materia: Geometría Analítica

Nombre del profesor: Jorge Enrique Albores Aguilar

Nombre de la Licenciatura: Bachillerato en Recursos Humanos

Cuatrimestre: 3er



Hector Elián Alejandro Villarreal

Ejercicio 1: Distancia y Perímetro:

$$P1(8, 2) \quad P1, P2 = \sqrt{(2-8)^2 + (7-2)^2} \quad \text{perímetro:}$$

$$P2(2, 7) \quad P1, P2 = \sqrt{0-6^2 + (5)^2} \quad 35.47$$

$$P3(-6, -3)$$

$$P1, P2 = \sqrt{36 + 25}$$

$$P1, P2 = \sqrt{61}$$

$$P1, P2 = 7.81$$

$$P2, P3 = \sqrt{(-6-2)^2 + (-3-7)^2}$$

$$P2, P3 = \sqrt{(-8)^2 + (-10)^2}$$

$$P2, P3 = \sqrt{64 + 100}$$

$$P2, P3 = \sqrt{164}$$

$$P2, P3 = 12.80$$

$$P3, P1 = \sqrt{(8-(-6))^2 + (2-(-3))^2}$$

$$P3, P1 = \sqrt{14^2 + 5^2}$$

$$P3, P1 = \sqrt{196 + 25}$$

$$P3, P1 = \sqrt{221}$$

$$P3, P1 = 14.86$$

Ángulos y Pendientes:

$P1, P2$

$$m = \frac{7-2}{2-8} = \frac{5}{-6} = -\frac{5}{6}$$

$$\theta = \arctan = \arctan m \left(\frac{5}{6} \right) = 39^\circ 48' 20.06''$$

$P2, P3$

$$m = \frac{-3-7}{-6-2} = \frac{-10}{-8} = \frac{10}{8}$$

$$\theta = \arctan = \arctan m \left(\frac{10}{8} \right) = 51^\circ 20' 24.69''$$

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P3, P1:

$$m = \frac{2 - (-3)}{8 - (-6)} = \frac{5}{14}$$

$$\theta = \arctan \Rightarrow \arctan m \left| \frac{5}{14} \right| = 19^\circ 39' 13.77''$$

Punto medio:

$$P1, P2 = (5, 4.5)$$

$$Pm \times \left(\frac{8+2}{2} \right) = \frac{10}{2} = 5$$

$$Pm \times \left(\frac{2+7}{2} \right) = \frac{9}{2} = 4.5$$

P2, P3: (-2, 2)

$$Pm \times \left(\frac{2+(-6)}{2} \right) = \frac{-4}{2} = -2$$

$$Pm \times \left(\frac{7+(-3)}{2} \right) = \frac{4}{2} = 2$$

P3, P1: (-1, -0.5)

$$Pm \times \left(\frac{8+(-6)}{2} \right) = \frac{2}{2} = 1$$

$$Pm \times \left(\frac{2+(-3)}{2} \right) = \frac{-1}{2} = -0.5$$

Razones Dadas:

P1, P2:

$$r_x = \frac{8 + \frac{1}{3} \times (-2)}{1 + \frac{1}{3}} = \frac{8,2,3}{1 + \frac{1}{3}} = 6.5$$

$$r_y = \frac{2 + \frac{1}{3} \times (-7)}{1 + \frac{1}{3}} = \frac{4,1,3}{1 + \frac{1}{3}} = 3.25$$

P2, P3:

$$r_x = \frac{2 + \frac{1}{3} \times (-6)}{1 + \frac{1}{3}} = \frac{0}{1 + \frac{1}{3}} = 0$$

$$r_y = \frac{7 + \frac{1}{3} \times (-3)}{1 + \frac{1}{3}} = \frac{6}{1 + \frac{1}{3}} = 4.5$$

P3, P1:

$$r_x = \frac{-6 + \frac{1}{3} \times (8)}{1 + \frac{1}{3}} = \frac{-3,1,3}{1 + \frac{1}{3}} = -2.5$$

$$r_y = \frac{-3 + \frac{1}{3} \times (2)}{1 + \frac{1}{3}} = \frac{2,2,3}{1 + \frac{1}{3}} = 2$$

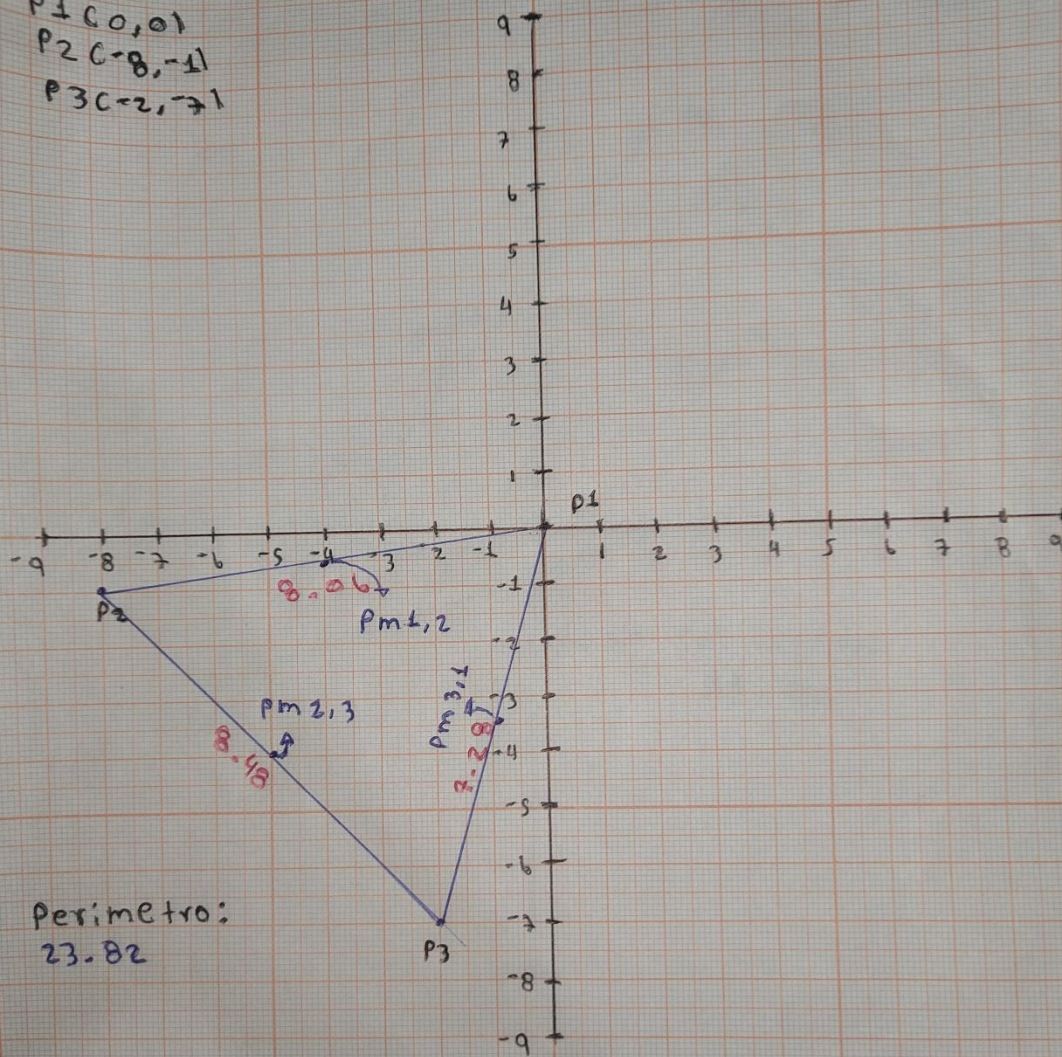
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Ejercicio 2:

$P_1(0,0)$

$P_2(-8,-1)$

$P_3(-2,-7)$



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Ejercicio 2: Distancia y perimetro: 23.82

$$P1(0,0) \quad P1, P2 = \sqrt{(-8-0)^2 + (-1-0)^2}$$

$$P2(-8,-1) \quad P1, P2 = \sqrt{(-8)^2 + (-1)^2}$$

$$P3(-2,-7) \quad P1, P2 = \sqrt{(-2)^2 + (-7)^2}$$

$$P1, P2 = \sqrt{65}$$

$$P1, P2 = 8.06$$

$$P2, P3 = \sqrt{(-2+8)^2 + (-7+1)^2}$$

$$P2, P3 = \sqrt{6^2 + (-6)^2}$$

$$P2, P3 = \sqrt{36 + 36}$$

$$P2, P3 = \sqrt{72}$$

$$P2, P3 = 8.48$$

$$P3, P1 = \sqrt{(-2-0)^2 + (-7-0)^2}$$

$$P3, P1 = \sqrt{2^2 + 49}$$

$$P3, P1 = \sqrt{4 + 49}$$

$$P3, P1 = \sqrt{53}$$

$$P3, P1 = 7.28$$

Pendiente y Angulos:

$$m = \frac{-1-0}{-8-0} = \frac{-1}{-8} = \frac{1}{8}$$

$$\theta = \arctan \frac{1}{8} = \arctan m \left(\frac{1}{8} \right) = 7^{\circ} 7' 30.06''$$

P2, P3:

$$m = \frac{-7-(-1)}{-2-(-8)} = \frac{-6}{6} = -1$$

$$\theta = \arctan -1 = \arctan m \left(\frac{-1}{1} \right) = 45^{\circ} 0' 0''$$

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P3, P1:

$$m = \frac{0 - (-7)}{0 - (-2)} = \frac{7}{2}$$

$$\theta = \arctan 9 = \arctan m\left(\frac{7}{2}\right) = 74^\circ 3' 16.57''$$

Punto medio:

P1, P2: (-4, -0.5)

$$Pm_x = \frac{(0 + (-8))}{2} = \frac{-8}{2} = -4$$

$$Pm_y = \frac{(0 + (-1))}{2} = \frac{-1}{2} = (-0.5)$$

P2, P3: (-5, -4)

$$Pm_x = \frac{(-8 + (-2))}{2} = \frac{-10}{2} = -5$$

$$Pm_y = \frac{(-1 + (-7))}{2} = \frac{-8}{2} = -4$$

P3, P1: (-1, -3.5)

$$Pm_x = \frac{(-2 + 0)}{2} = \frac{-2}{2} = -1$$

$$Pm_y = \frac{(-7 + 0)}{2} = \frac{-7}{2} = -3.5$$

$$\begin{matrix} x & y \\ (0, 5) & 19 \\ (9, 0) & 59 \end{matrix}$$

Razones Dadas

P1, P2:

$$r_x = \frac{(0 + r_x - 8)}{1 + r} = \frac{-2, 3}{1 + r} = -2$$

$$r_y = \frac{(0 + \frac{1}{3} \times (-1))}{1 + \frac{1}{3}} = \frac{-1, 3}{1 + \frac{1}{3}} = -0.25$$

P2, P3:

$$r_x = \frac{-8 + \frac{1}{3} \times (-2)}{1 + \frac{1}{3}} = \frac{-8, 2, 3}{1 + \frac{1}{3}} = -6.5$$

$$r_y = \frac{-1 + \frac{1}{3} \times (-7)}{1 + \frac{1}{3}} = \frac{-3, 1, 3}{1 + \frac{1}{3}} = -2.5$$

P3, P1:

$$r_x = \frac{-2 + \frac{1}{3} \times (0)}{1 + \frac{1}{3}} = \frac{-2}{1 + \frac{1}{3}} = -1.5$$

$$r_y = \frac{-7 + \frac{1}{3} \times (0)}{1 + \frac{1}{3}} = \frac{-7}{1 + \frac{1}{3}} = -5.2$$