



**Nombre de alumno: DAVID DANIEL
VAZQUEZ HERNANDEZ**

**Nombre del profesor: Jorge Sebastián
Domínguez**

Nombre del trabajo: ecuaciones

Materia: geometría analítica

PASIÓN POR EDUCAR

Grado: 4 semestre

Grupo: A

Comitán de Domínguez Chiapas a 24 de Agosto de 2020.

$y - y_1 = m(x - x_1)$ $m = \frac{y_2 - y_1}{x_2 - x_1}$

Primer Ejercicio

$A = (-4, 2)$ $D = (2, 2)$ $H = (4, -2)$ $J = (2, -2)$
 $B = (-2, 2)$ $E = (0, 1)$ $G = (2, 0)$
 $C = (1, 3)$ $F = (4, 1)$ $I = (-1, 3)$

Segundo Ejercicio (Distancia entre 2 ptos)

$1^\circ P_1(2, 5) \text{ y } P_2(-1, 0)$ $4^\circ P_1(0, 0) \text{ y } P_2(10, 0)$
 $2^\circ P_1(-3, 10) \text{ y } P_2(-11, 2)$ $5^\circ P_1(-2, 15) \text{ y } P_2(6, -13)$
 $3^\circ P_1(6, -12) \text{ y } P_2(9, 2)$

$1. d = \sqrt{(2 - (-1))^2 + (5 - 0)^2}$
 $d = \sqrt{3^2 + 5^2}$
 $d = \sqrt{9 + 25}$
 $d = \sqrt{34}$

$2. d = \sqrt{(-3 - (-11))^2 + (10 - 2)^2}$
 $d = \sqrt{8^2 + 8^2}$
 $d = \sqrt{64 + 64}$
 $d = \sqrt{128}$
 $d = 11.3$

$3. d = \sqrt{(6 - 9)^2 + (-12 - 2)^2}$
 $d = \sqrt{(-3)^2 + (-14)^2}$
 $d = \sqrt{9 + 196}$
 $d = \sqrt{205}$
 $d = 14.3$

$4. d = \sqrt{(0 - 10)^2 + (0 - 0)^2}$
 $d = \sqrt{10^2 + 0}$
 $d = \sqrt{100}$
 $d = 10$

$5. d = \sqrt{(-2 - 6)^2 + (15 - (-13))^2}$
 $d = \sqrt{(-8)^2 + (28)^2}$
 $d = \sqrt{64 + 784}$
 $d = \sqrt{848}$
 $d = 29.1$

$$4. d = \sqrt{(100-0)^2 + (0-0)^2}$$

$$d = \sqrt{10000 + 0}$$

$$d = \sqrt{10000}$$

$$d = 100$$

$$5. d = \sqrt{(-6-(-2))^2 + (-13-(-15))^2}$$

$$d = \sqrt{(-4)^2 + (-2)^2}$$

$$d = \sqrt{16 + 4}$$

$$d = \sqrt{20}$$

$$d = 4.47$$

Tercer Ejercicio (Punto medio)

$$1. P_1(-4, 6) \text{ al } P_2(2, 0)$$

$$2. P_1(3, -2) \text{ al } P_2(6, -9)$$

$$3. P_1(0, 0) \text{ al } P_2(12, -26)$$

$$4. P_1(-2, 4) \text{ al } P_2(10, 4)$$

$$1. = (-4, 6) (2, 0)$$

$$\frac{-4+2}{2} = \frac{-2}{2} = -1$$

$$\frac{6+0}{2} = \frac{6}{2} = 3$$

$$2. (3, -2) (6, -9)$$

$$\frac{3+6}{2} = \frac{9}{2} = 4.5$$

$$\frac{-2+(-9)}{2} = \frac{-11}{2} = -5.5$$

$$3. (0, 0) (12, -26)$$

$$\frac{0+12}{2} = \frac{12}{2} = 6$$

$$\frac{0+(-26)}{2} = \frac{-26}{2} = -13$$

$$4. (-2, 4) (10, 4)$$

$$\frac{-2+10}{2} = \frac{8}{2} = 4$$

$$\frac{4+4}{2} = \frac{8}{2} = 4$$

Angulo de inclinación

Cuarto Ejercicio (Distancia entre 2 Puntos)

$$2. \begin{matrix} P_1 & P_2 \\ (0, 0) & (6, 6) \end{matrix}, \begin{matrix} P_1 & P_2 \\ (1, 0) & (3, -8) \end{matrix}, \begin{matrix} P_1 & P_2 \\ (-5, 0) & (6, 0) \end{matrix}$$

$$4. \begin{matrix} P_1 & P_2 \\ (-3, 4) & (1, 4) \end{matrix}, \begin{matrix} P_1 & P_2 \\ (2, -4) & (0, 7) \end{matrix}, \begin{matrix} P_1 & P_2 \\ (-1, -1) & (3, 2) \end{matrix}$$

$$m = \frac{0-6}{0-6} = \frac{-6}{-6} = 1$$

$$2. m = \frac{3-1}{-8-0} = \frac{2}{-8} = -0.25$$

$$3. m = \frac{0-0}{6-(-5)} = \frac{0}{11} = 0$$

$$5. m = \frac{7+(-4)}{0-(-2)} = \frac{3}{2} = 1.5$$

$$4. m = \frac{4-4}{1-(-3)} = \frac{0}{4} = 0$$

$$6. m = \frac{2-(-1)}{3-(-1)} = \frac{3}{4} = 0.75$$

Quinto Ejercicio (Determinar la ecuación de la recta (pendiente ordenada))

$$m = -13 \quad b = -7$$

$$m = 9 \quad b = 15$$

$$m = 13 \quad b = -6$$

$$m = 11 \quad b = -14$$

$$m = -1.6 \quad b = 13$$

$$m = -2.5 \quad b = 8$$

$$m = 8 \quad b = -2$$

$$m = -13 \quad b = 4$$

$$m = 11 \quad b = 0$$

$$y - y_1 = m(x - x_1)$$

Sexto ejercicio

A) $(4, -6)$ $m = -1$

$$\begin{aligned}y - (-6) &= -1(x - 4) \\y + 6 &= -1x + 4 \\y &= -1x + 4 - 6 \\y &= -1x - 2\end{aligned}$$

B) $(2, 5)$ $m = 5$

$$\begin{aligned}y - 5 &= 5(x - 2) \\y - 5 &= 5x - 10 \\y &= 5x - 10 + 5 \\y &= 5x - 5\end{aligned}$$

D) $(5, -14)$ $m = -7$

$$\begin{aligned}y - (-14) &= -7(x - 5) \\y + 14 &= -7x + 35 \\y &= -7x + 35 - 14 \\y &= -7x + 21\end{aligned}$$

E) $(-3, -12)$ $m = -6$

$$\begin{aligned}y - (-12) &= -6(x - (-3)) \\y + 12 &= -6(x + 3) \\y + 12 &= -6x - 18 - 12 \\y &= -6x - 30\end{aligned}$$

F) $(10, 11)$ $m = -2$

$$\begin{aligned}y - 11 &= -2(x - 10) \\y - 11 &= -2x + 20 \\y &= -2x + 20 + 11 \\y &= -2x + 31\end{aligned}$$

G) $(13, -13)$ $m = 7$

$$\begin{aligned}y - (-13) &= 7(x - 13) \\y + 13 &= 7x - 91 \\y &= 7x - 91 - 13 \\y &= 7x - 104\end{aligned}$$

Septimo Ejercicio (Ecuación de la recta que pasa por los puntos)

A(5,1) y B(4,-2)

$$m = \frac{-2-1}{4-5} = \frac{-3}{-1} = 3$$

$$y-1 = 3(x-5)$$

$$y-1 = 3x-15$$

$$y = 3x-14$$

E(-2,-3) y F(4,0)

$$m = \frac{0-(-3)}{4-(-2)} = \frac{3}{6} = 0.5$$

$$y-(-3) = 0.5(x-(-2))$$

$$y+3 = 0.5x+1$$

$$y+3 = 0.5x+1-3$$

$$y = 0.5x-2$$

I(10,5) y J(-2,-1)

$$m = \frac{-1-5}{-2-10} = \frac{-6}{-12} = 0.5$$

$$y-5 = 0.5(x-10)$$

$$y-5 = 0.5x-5$$

$$y = 0.5x$$

$$y = 0.5x + 0$$

C(2,7) y D(-2,3)

$$m = \frac{3-7}{-2-2} = \frac{-4}{-4} = 1$$

$$y-7 = 1(x-2)$$

$$y-7 = x-2$$

$$y = x+5$$

$$y = x+5$$

G(4,6) y H(1,3)

$$m = \frac{3-6}{1-4} = \frac{-3}{-3} = 1$$

$$y-6 = 1(x-4)$$

$$y-6 = x-4$$

$$y = x+2$$

$$y = x+2$$

Optimo Ejercicio

Determina la ecuación de la recta en su forma simétrica

a=1 b=6 $\rightarrow \frac{x}{1} + \frac{y}{6} = 1$

a=-5 b=-12 $\rightarrow \frac{x}{-5} + \frac{y}{-12} = 1$

a=-1 b=-2 $\rightarrow \frac{x}{-1} + \frac{y}{-2} = 1$

a=12 b=14 $\rightarrow \frac{x}{12} + \frac{y}{14} = 1$

a=-2 b=14 $\rightarrow \frac{x}{-2} + \frac{y}{14} = 1$

a=10 b=1 $\rightarrow \frac{x}{10} + \frac{y}{1} = 1$

a=9 b=-12 $\rightarrow \frac{x}{9} + \frac{y}{-12} = 1$

a=-11 b=15 $\rightarrow \frac{x}{-11} + \frac{y}{15} = 1$

a=9 b=-6 $\rightarrow \frac{x}{9} + \frac{y}{-6} = 1$

a=13 b=13 $\rightarrow \frac{x}{13} + \frac{y}{13} = 1$

Noveno Ejercicio Conversión de la recta en su forma general

Ecuación recta Fórmula general

$$y = 6x - 20 \quad \longleftrightarrow \quad 6x - y - 20 = 0$$

$$y = 3x - 16 \quad \longleftrightarrow \quad 3x - y - 16 = 0$$

$$y = -10x + 1 \quad \longleftrightarrow \quad -10x + y + 1 = 0$$

$$-10y + 6x = -18 \quad \longleftrightarrow \quad 6x - 10y + 18 = 0$$

$$-3y + x - 6 \quad \longleftrightarrow \quad x - 3y - 6 = 0$$

$$-10y + x = 9 \quad \longleftrightarrow \quad x - 10y - 9 = 0$$

