INTELIGENCIA ARTIFICIAL

TALLER

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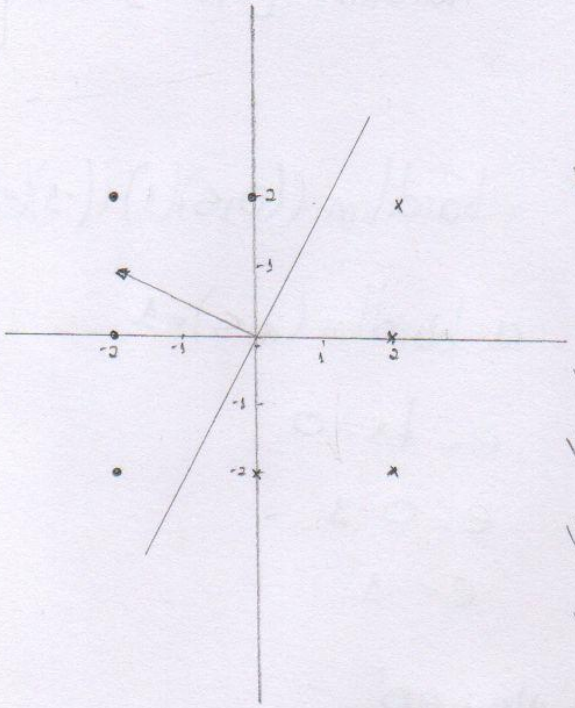
CARTAGO VALLE

CORPORACIÓN DE ESTUDIOS TECNOLÓGICOS DEL NORTE DEL VALLE

TECNÓLOGO EN SISTEMAS DE APLICACIÓN

2018

① 

$(1,2)(-1,-2)$

$$m=\frac{y_2-y_1}{x_2-x_1}=\frac{-2-2}{-1-1}=\frac{-4}{-2}=2$$

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

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

$$y-2=2x-2$$

$$y=2x-2+2$$

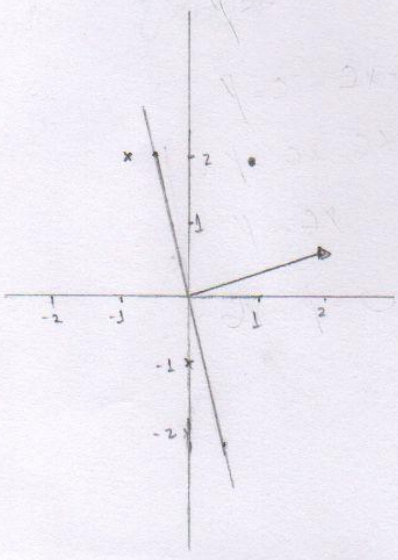
$$y=2x$$

$$\boxed{2x-y=0}$$

ECUACIÓN DE LA RECTA.

$$W=\begin{bmatrix}-2\\1\end{bmatrix}$$

$b=0$

② 

$(-0,5,2)$
$x_1\ y_1$
$(0,5,-2)$
$x_2\ y_2$

$$m=\frac{y_2-y_1}{x_2-x_1}=\frac{-2-2}{0,5+0,5}=\frac{-4}{1}$$

$$y-2=-4(x+0,5)$$

$$y-2=-4x-2$$

$$y=-4x-2+2$$

$$y=-4x$$

$$\boxed{-4x-y=0}$$

ECUACIÓN DE LA RECTA

$$W=\begin{bmatrix}2\\0,5\end{bmatrix}$$

$b=0$

(3)

LARANJA

$P_1 = \begin{bmatrix} 1 \\ -1 \\ -1 \end{bmatrix}$ $t_1 = 0$

MAÇÃS

$P_2 = \begin{bmatrix} 1 \\ 1 \\ -1 \end{bmatrix}$ $t_2 = 1$

$W = 0,5 \ -1 \ -0,5$

$b = 0,5$

$a = \text{hardlim}(wp + b)$

$a = \text{hardlim}\left([0,5 \ -1 \ -0,5]\begin{bmatrix} 1 \\ -1 \\ -1 \end{bmatrix} + 0,5\right)$

$= \text{hardlim}((0,5)(1) + (-1)(-1) + (0,5)(-1) + 0,5)$

$a = \text{hardlim}(2,5) = 1$

$e = t_1 - a$

$e = 0 - 1$

$e = -1$

$W_n = Wa + ep^T$

$W_n = [0,5 \ -1 \ -0,5] + (-1)\left[1 \ -1 \ -1\right]$

$W_n = [0,5 \ -1 \ -0,5] + [-1 \ 1 \ 1]$

$W_n = [0,5 \ 0 \ 0,5]$

$b_n = ba + e$

$b_n = 0,5 - 1 = -0,5.$

LARANJAS

$a = hardlim(wp + b)$

$a = hardlim\left(\begin{bmatrix} -0,5 & 0 & 0,5 \end{bmatrix}\begin{bmatrix} 1 \\ 1 \\ -1 \end{bmatrix} - 0,5\right)$

$a = hardlim(-1,5) = 0$

$e = t_2 - 0$

$e = 1 - 0$

$e = 1$

$W_1 = W_0 + ep^T$

$W_1 = [-0,5 \;\; 0 \;\; 0,5] + (1)[1 \;\; 1 \;\; -1]$

$W_1 = [-0,5 \;\; 0 \;\; 0,5] + [1 \;\; 1 \;\; -1]$

$W_1 = [0,5 \;\; 1 \;\; -0,5]$

$b_1 = b_0 + e$

$b_1 = 0,5 + 1 = 0,5$

$P_1 \begin{bmatrix} 1 \\ -1 \\ -1 \\ -1 \end{bmatrix} \quad t_1 = 0$

$a = hardlim(wp + b)$

$a = hardlim([0{,}5 \;\; 1 \;\; -0{,}5] \begin{bmatrix} 1 \\ -1 \\ -1 \\ -1 \end{bmatrix} + 0{,}5)$

$a = hardlim(0{,}5) = 1$

$e = t_1 - a$

$e = 0 - 1$

$e = -1$

$W_n = W_a + ep^T$

$W_n = [0{,}5 \;\; 1 \;\; -0{,}5] + (-1)[1 \;\; -1 \;\; -1]$

$W_n = [0{,}5 \;\; 1 \;\; -0{,}5] + [-1 \;\; 1 \;\; 1]$

$W_n [-0{,}5 \;\; 2 \;\; 0{,}5]$

$b_n = ba + e$

$b_n = 0{,}5 - 1$

$b_n = -0{,}5$

$P_2 = \begin{bmatrix} 1 \\ 1 \\ -1 \\ -1 \end{bmatrix} \quad t_2 = 1$

$a = hardlim(wp + b)$

$a = hardlim([-0{,}5 \;\; 2 \;\; 0{,}5] \begin{bmatrix} 1 \\ 1 \\ -1 \\ -1 \end{bmatrix} - 0{,}5)$

$a = hardlim(0{,}5) = 1$

$e = t_2 - a$

$e = 1 - 1$

$e = 0$

Total

$W = [0{,}5 \;\; 2 \;\; 0{,}5]$

$b = 0{,}5$