bias → intercept

coef

Perceptron

$w_0 \times 1 + w_1 x_1 + w_2 x_2 = 0$
$\quad\quad\quad\quad (x) \quad (y)$

$\begin{bmatrix} 1 \\ x_1 \\ x_2 \end{bmatrix}$ ← bias

coef = [[-1.4 -2.2]]
·bias = [4.]

$y = ax + b$

$x = \dfrac{-(w_0 - w_2 y)}{w_1} =$

$y = 0$

$= x = \dfrac{-(w_0 - w_2 \times 0)}{w_1}$

$= x = -\dfrac{w_0}{w_1}$

$P_1 = \left(0, -\dfrac{w_0}{w_2}\right)$

$P_2 = \left(-\dfrac{w_0}{w_1}, 0\right)$

$y = \dfrac{-(w_0 - w_1 x_1)}{w_2}$

$X = 0$

$y = \dfrac{-(w_0 - w_1 \cdot 0)}{w_2}$

$y = \dfrac{-w_0}{w_2}$

$\text{slope} = \dfrac{\left(0 - \left(-\dfrac{w_0}{w_2}\right)\right)}{\left(\left(\dfrac{-w_0}{w_1}\right) - 0\right)} = \boxed{-(w_0/w_2) \Big/ (w_0/w_1)}$

$y = \left(-(w_0/w_2) \Big/ (w_0/w_1)\right) x + \left(-w_0/w_2\right)$

$y = \left(-(4/-2.2) \Big/ (4/-1.4)\right) x + \left(-(4/-2.2)\right)$

$-(-1.818181) \Big/ (-2.857) \, x + (-(-1.818181))$

$\boxed{y = \boxed{-0.6363} x + \boxed{1.81818}}$
$\quad\quad\quad a \quad\quad\quad\quad b$

$\boxed{\text{Slope} = \dfrac{y_2 - y_1}{x_2 - x_1}}$

$b = -(w_0/w_2)$

$a = -(w_1/w_2)$

x	y
0	1.818181
5	-1.36363 4