

$$x_{-y} \geq 0$$

The sketches illustrate the geometric interpretation of the simplex method. The first sketch shows a 2D coordinate system with a feasible region (shaded green) and an objective function line (red) being moved. The second sketch shows a 3D coordinate system with a feasible region (shaded green) and an objective function plane (red). The third sketch shows a 2D coordinate system with the optimal solution at the intersection of two lines, labeled with equations like $3x + 4y = 12$ and $x + y = 3$.

$$\begin{cases} x=1 \\ y=0 \end{cases} \leftarrow \text{stationary}$$

A hand-drawn diagram of a neural network layer. It shows four input nodes labeled x_1, x_2, x_3, x_4 connected to four weight nodes labeled w_1, w_2, w_3, w_4 . The connections are represented by lines. There are also some additional markings, including a large bracket on the left and a checkmark on the right.

$$-2 < 0$$

$$1 \cdot 2 \cdot 1 - 0 \cdot 0 = 2 > 0$$

$$X, y \geq 0$$

$$\begin{array}{ll} X=0 & X \rightarrow \infty \\ Y=0 & Y \rightarrow \infty \end{array}$$

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$$f'(x) = 0$$

$$x - 1 \neq \dots$$

$$f''(x_1) \rightarrow$$

negative defn

$$(X^2 + 1)^{-1} =$$

$$= 2x - 1.6$$

$$= -\frac{2x}{(x^2+1)^2}$$

$$f'_y(x))$$

$$(X^n)' = n X^{n-1}$$

$$P(f) = (-\infty, \infty]$$

$$\frac{1}{x^2+1} \xrightarrow{x \rightarrow 0} 0$$

$$x \rightarrow \infty$$

$$(x^2 + 1)^{-1} \rightarrow 0$$

$x \rightarrow -$

$x \rightarrow 0$

$$-2x (x^2+1)^{-2} = -2(x^2+1)^{-2} + (-2x)(x^2+1)^{-2}$$

$$(f \cdot g)' = f'g + g'f$$

$$\pm \frac{1}{\sqrt{3}}$$



