

Examples and Intuitions I

A simple example of applying neural networks is by predicting x_1 AND x_2 , which is the logical 'and' operator and is only true if both x_1 and x_2 are 1.

The graph of our functions will look like:

$$\begin{bmatrix} x_0 \\ x_1 \\ x_2 \end{bmatrix} \rightarrow [g(z^{(2)})] \rightarrow h_{\Theta}(x)$$

Remember that x_0 is our bias variable and is always 1.

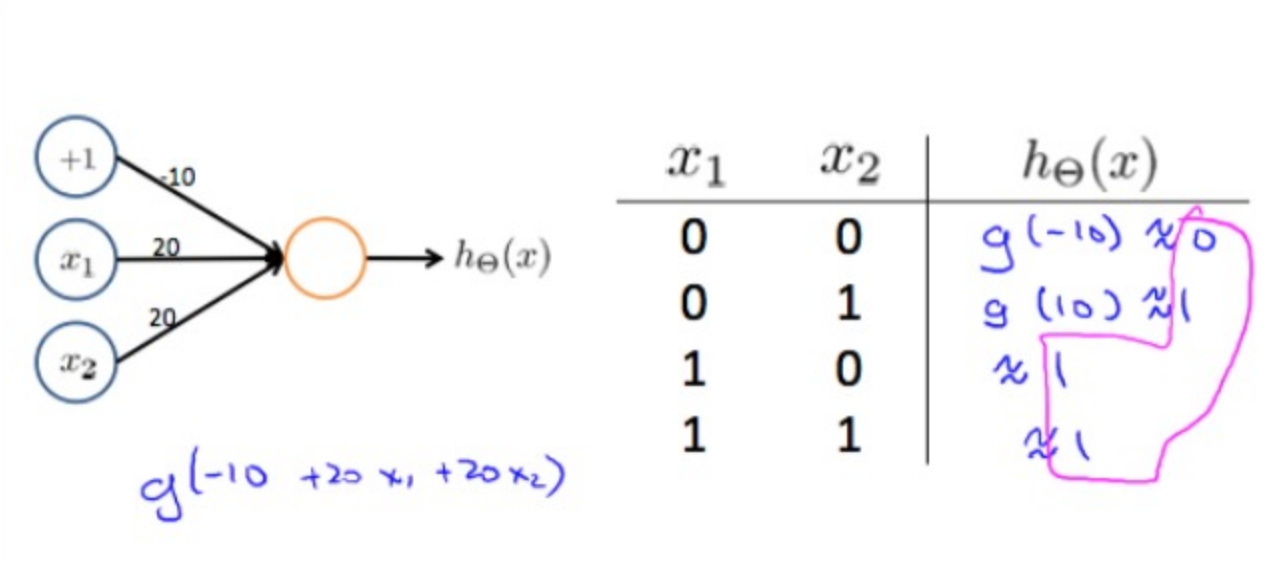
Let's set our first theta matrix as:

$$\Theta^{(1)} = [-30 \quad 20 \quad 20]$$

This will cause the output of our hypothesis to only be positive if both x_1 and x_2 are 1. In other words:

$$h_{\Theta}(x) = g(-30 + 20x_1 + 20x_2)$$

$x_1 = 0$ and $x_2 = 0$ then $g(-30) \approx 0$



Where $g(z)$ is the following:

