

$$0 \leq \sum x_i w_i + b = 1$$

$$0 > \sum x_i w_i + b = 0$$

- And functions
- Or functions
- Not functions
- Input(s) =  $w \cdot 1$
- $W = 0$  or  $1$

(using the above equations (^^^^) vvvvv)

- **And gate**
- $W1 = 1, w2 = 1, b = -2$

x	y	result
0	0	0
1	0	0
0	1	0
1	1	1

- **Or gate**
- $W1 = 1, w2 = 1, b = -1$

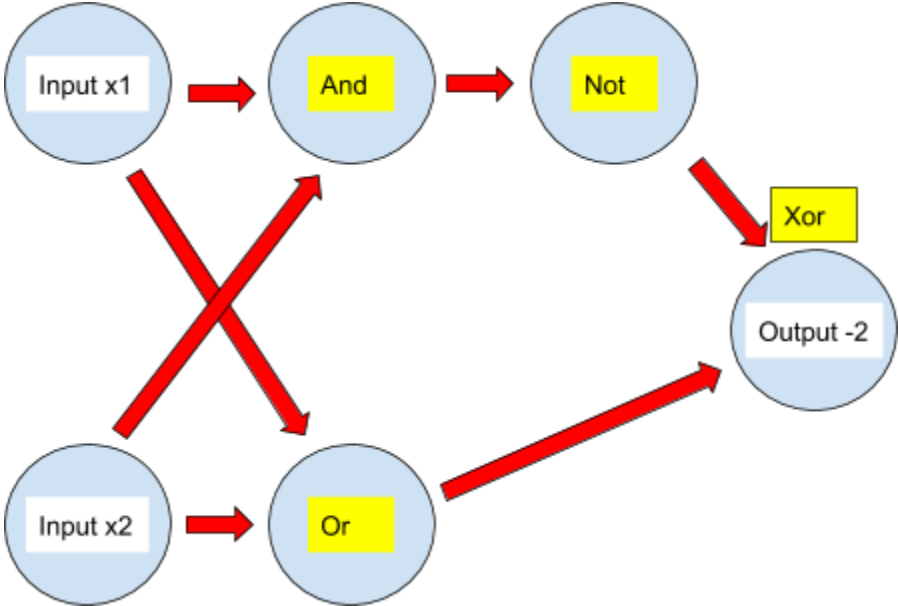
x	y	result
0	0	0
1	0	1
0	1	1
1	1	1

- **Not gate**
- $W1 = 0, w2 = -1, b = 0$

x	y	result
0	0	1
1	0	0
0	1	0

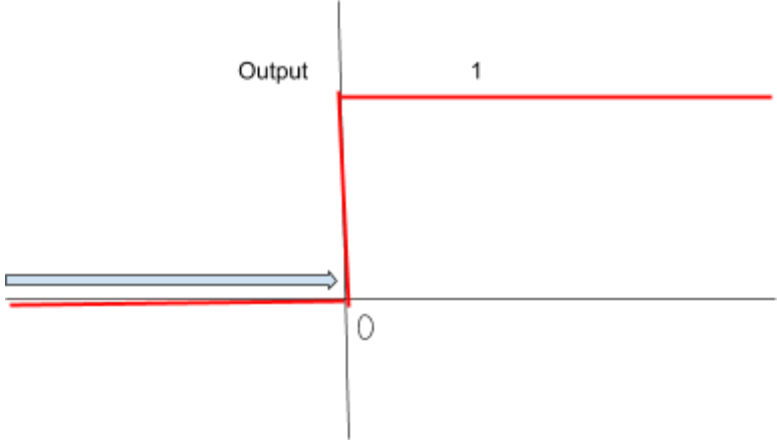
1	1	0
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- Xor gate**



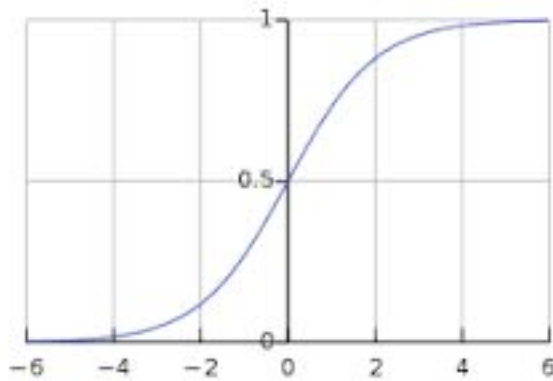
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x	y	result
0	0	0
1	0	1
0	1	1
1	1	0



heaviside function

- **Activation Function**
- Heaviside fn is an example of an activation fn
- A **sigmoid function** looks like an 'S' (vvvv)



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- $S(x) = \frac{1}{1 + e^{-x}} = \frac{e^x}{e^x + 1}$ . *sigmoid equation*
- **ReLU (Rectified Linear Unit)**



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