Introduction to Neuroinformatics   **HS 2018**
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Lecture 12
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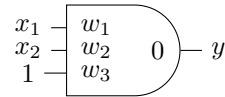
Exercise 12.1: The Perceptron Learning Algorithm

Consider the following McCulloch-Pitts neuron with two inputs x_1 and x_2 and no threshold ($\theta = 0$), but an "input" x_3 whose value is fixed to 1.

Perform the perceptron learning with a learning rate of $\alpha = 0.3$ on this neuron by completing the following table!

The learning rate expresses (as an absolute value) by how much you update the weight of an input that was active, when the perceptron made an error (the sign depends on the sign of the error):

$$\Delta w_i = \pm \alpha \cdot x_i$$

x_1	x_2	desired output	current output	w_1	w_2	w_3
1	0	1	0	−0.4	0.5	−0.4
0	1	1				
1	1	1				
0	0	0				
1	0	1				
0	1	1				
1	1	1				
0	0	0				
1	0	1				
0	1	1				
1	1	1				
0	0	0				