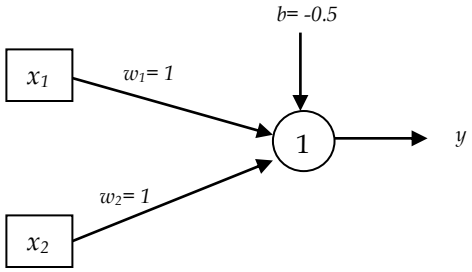
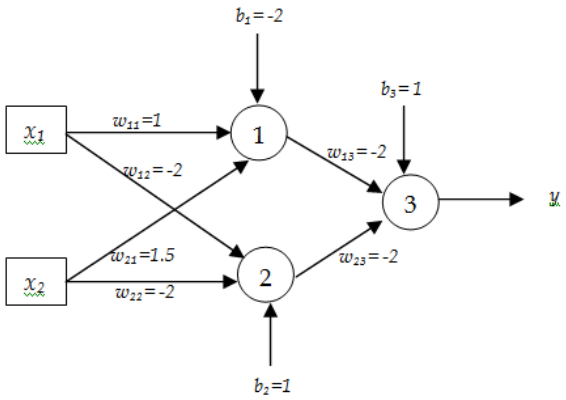
Assignment 1

1. Consider the following neural network. Compute output of the network by assuming each of the following activation function: *Assume input (2, 1).*
   a. Step function with threshold 1.
   b. Linear function *2x-1*
   c. Logistic Function
   d. Tanh Function



2. What will be the probability of firing neuron in the neural network of question number 1, if the model of neuron is stochastic? *Assume input (2, 1).*
3. Consider following MLP and compute its output. Assume that input is (1,1) and sigmoid activation function is used in each node.



4. Train perceptron using perceptron training algorithm. Use following training set. Assume that hard limiter activation function is used.

x_1	x_2	t
1	1	1
1	-1	1
-1	1	1
-1	-1	-1

5. Train perceptron using given training set and predict class for the input (4.5,40) and (5.8,75).

Height(x_1)	***Weight(x_2)***	***Class(t)***
5.6	72	Adult
5.8	78	Adult
4.9	45	Children
4.6	35	Children
5.7	65	Adult
5.4	58	Adult
4.7	38	Children
4.4	32	Children