Multi-layer Perceptrons (Neural Networks)

1. Suppose we have a single two-input perceptron with weights:

$w_b = 0.5$, $w_1 = 0.7$ and $w_2 = 0.22$

and inputs:

$I_1 = -4$, $I_2 = 12$

a) Calculate the output for a threshold function of T = 0

b) Calculate the output for a threshold function of T = 0.5

c) Calculate the output when the sigmoid function is used

2. The neural network given below is the final one derived in the tutorial.

- Feedforward; then calculate total Error in the network. Has it been reduced?

3. In neural network training, summing the error over all training examples and then adjusting weights is called *batch* learning, while performing these steps after each training example is called *online* learning. What might be some qualitative/quantitative differences between these approaches?