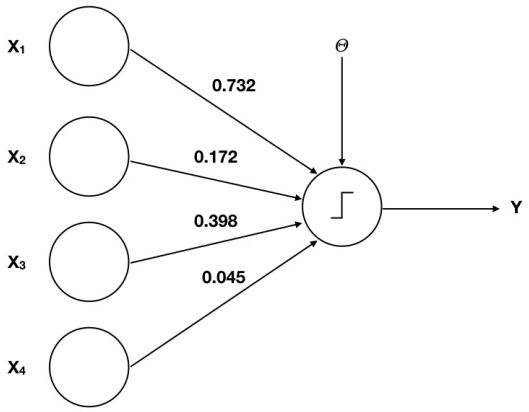
BME 200
HW5

Follow the homework guidelines on the course webpage to answer the following.

1. Your are given a single-layer perceptron with $\Theta = 0.5$ and the weights shown below. Calculate the output of the perceptron if $\{x_1, x_2, x_3, x_4\} =$

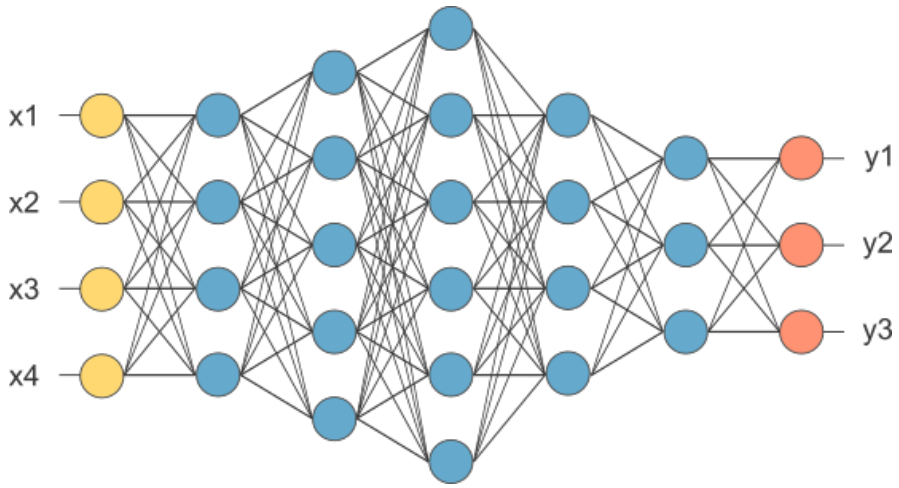
   (a) {0, 0, 1, 0}
   (b) {0, 0, 1, 1}
   (c) {1, 1, 0, 1}
   (d) {1, 0, 0, 1}



2. If you wanted to plot the input data for the neural network in problem 1, how many dimensions would you need?

3. Given the neural network shown below, answer the following.

   (a) How many hidden layers does this neural network have?
   (b) How many nodes does the neural network have?



4. Given the graph below, answer the following:

   (a) If you wanted to classify the data shown in the plot with a single-layer perceptron, how many inputs would your neural network have?
   (b) What weights in the neural network would produce the line shown on the plot? Assume $\Theta = 0.5$.