Using the recording of a) **Lecture 5 Video 2 and 3** and b) **Lecture 7, Video 1, 2 and 3** solve the following question on paper (not excel). Take a picture of your solution and submit.

You are given the following data set:

			Class
1	0	1	0
0	1	1	1

You need to train this data using ANN. The network has 2 nodes in the hidden layer and 1 node in the output layer.

1. Specify the dimensions of the weight vector(s) needed to build this ANN. (**Lecture 5 Video 2 and 3)**
2. Create weight vector(s) according to the answer given in part 1, and Initialize them with **distinct** random weights greater than 0 and less than 1.
3. Using these weights calculate the cost of the network using mean squared error. **Lecture 7, Video 1**
4. Update all weights using gradient descent with back propagation. Show one iteration. Set the value of learning rate to 0.2. Show all steps. **Lecture 7, Video 1, 2 and 3**