**Homework 1**

**Part 1**

Construct by hand a Perceptron which correctly classifies the following data; use your knowledge of plane geometry to choose appropriate values for the weights w0, w1 and w2.

Training example x1 x2 class

a. 0 1 -1

b. 2 0 -1

c. 1 0 +1

(i) Draw points on 2-D graph and check Perceptron with

w0 = -5, w1 = 4, w2 = 2 classifies the data into classes.

(ii) Demonstrate the Perceptron Learning Algorithm on the above data, using a learning rate of 1.0 and initial weight values of

w0 = -1.5  
w1 =   0  
w2 =   2

In your answer, you should clearly indicate the new weight values at the end of each training step.

Hint: make a table to show each iterative step.