

Homework 5

Due: 7 April 2016

Problem 5.1

Consider the following data set:

$\langle 0, 10 \rangle : +$
 $\langle 10, 0 \rangle : +$
 $\langle 0, -10 \rangle : -$
 $\langle -10, 0 \rangle : -$
 $\langle -10, 10 \rangle : +$
 $\langle 10, 10 \rangle : +$
 $\langle 10, -10 \rangle : -$
 $\langle -10, -10 \rangle : -$

If you train a simple perceptron, with initial weights of 0 and learning factor $\alpha = 0.5$, during what epoch (iteration through the data) would it converge? What would be the final weight vector? Draw a diagram including the weight vector and a dotted line representing the separator.