HW #3

DUE MONDAY, NOVEMBER 9, 11:59 PM (ONLINE SUBMISSION VIA GRADESCOPE)

(1) Exercise 3.2 (Not Problem 3.2) LFD (Learning from data book). Repeat the classification problem with the weights obtained from solving the Linear Regression and Logistic Regression problem for the same data set.
(2) Exercise 3.4 ((Not Problem 3.4) LFD
(3) Problem 3.1 LFD
(4) Problem 3.2 LFD
(5) Problem 3.17 LFD
(6) Problem 4.4 LFD
(7) Problem 4.8.LFD
(8) Problem 4.19. LFD. You are only required to do what is asked below. In this problem the Lasso algorithm is discussed. In class, we discussed the geometric interpretation of the Lagrange multiplier condition for ridge regression that leads to the necessary condition for optimality.
    (a) In this homework problem, first sketch the level sets (contour plots) of E_{in} and the constraint set for the Lasso problem (see page 130 for the equivalent sketch for the ridge regression).
    (b) Is it reasonable to expect that several entries of the resultant weight vector will be zero? Why or why not?