HW 5

Optimization methods 2011

1. 13.5, 13.9 (graph the solution), 15.3.

2. Find
$$\min_{x \in R_2} f(x), \quad f = x_1^2 + x_2^2, \text{ subject to } x_1 - x_2 = 1$$

   using:

   (a) quadratic penalty, take $\mu = 1, 10, 50$,

   (b) absolute value (non-smooth) penalty, take $\mu = 1/2, 1, 10$ (you may use other values)

   (c) augmented Lagrangian, start with the point $\lambda_0 = 0$, $\mu_0 = 1$.