Course code - SMAT430C

Course Title - Convex Optimization

List of problems to be done from Chapter - 4

1. Understand example. 4.1 page 128.
2. Solve Ex.4.1, 4.3, 4.7(a),(b) 4.9,4.19 (a), (b)

List of problems to be done from Chapter - 5

1. Understand example. 5.2 page 245 upto writing the KKT conditions.
2. Ex. 5.1. (a) Is the problem convex? Give the feasible set.
   (b) Is Slater's condition satisfied?
   (c) Find the primal optimal value, and primal optimal point(s)
   (d) Find the Lagrangian and the Lagrange dual function
   (e) State the dual problem
   (f) Find the dual optimal value, and dual optimal point(s).
   (g) Verify that strong duality holds. Can you conclude this directly?
3. Solve Ex.5.21(a), (b), (c)
4. Solve Ex.5.26 (a), (b) (c)
5. Consider the constrained minimization problem
   minimize$(x_1 - 1)^2 + x_2 - 2$
   subject to $x_2 - x_1 = 1$
   $x_1 + x_2 \leq 2$.
   Write the Karush-Kuhn-Tucker conditions for the above problem. Further, use these conditions to nd the optimal point(s) and optimal value