Problem Set #6

ECON 407: Mathematical Economics

(**due next class**)

1. Find the extreme values of the following constrained optimization problems. Check the second-order conditions to determine if the objective function is maximized, minimized, or neither at the extreme values you calculate.

a) subject to the budget constraint

b) subject to the budget constraint

2. Minimize a firm’s total costs when the firm has to meet a production quota equal to by (i) finding the critical values and (ii) using the bordered Hessian to test the second-order conditions.

3. Write the Lagrangian function and find the first-order conditions for the following (you do not need to solve for the critical values):

subject to