

MATHEMATICS FOR ECONOMICS

PROBLEM SET 11

The problems came from Simon and Blume (1994).

Chapter 18: 17 (redo these problems with the K-T conditions for problems with non-negativity constraints)

In addition, you are asked to answer the following open question in Note 11

1. In Theorem 3 of Note 7 assume the objective function is pseudoconcave and the restriction functions are quasiconvex. Show that the statement of the theorem is still valid. You do not need to change the proof; you just need to provide an alternative justification of each of the Why?'s.
2. In Theorem 5 of Note 8 assume the objective function is pseudoconcave and the restriction functions are quasiconvex. Show that the statement of the theorem is still valid. You do not need to change the proof; you just need to provide an alternative justification of each of the Why?'s.
3. Use Theorem 7 to show that $x^* = 0$ is a global maximum of $f(x) = -|x|$ given the constraint $x^2 \leq 1$.