MATHEMATICS FOR ECONOMICS

PROBLEM SET 7

The problems came from Simon and Blume (1994).

Chapter 18: 1, 2, 3, 4, 5, 6, 7, 8, 9

Note: Problem 9 above has two parts. In the first part, you solve the constrained maximization problem, and you find the maximum value attained by the objective function at the optimum. In the second part, you show that the result of the maximization problem implies an interesting and intuitive mathematical result: that the geometric mean of three numbers is always less than or equal to the arithmetic mean of those three numbers.

In addition, you are asked to answer the following open question in Note 7

1. Justify each of the three Why?'s in the proof of Theorem 3.