UNIVERSITY OF ATHENS
Department of Economics
Course: Advanced Microeconomics
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Assignment no. 2   *The answers are due on December 16*

Exercise 4.1

You observe a consumer in two situations: with an income of €100 he buys 5 units of good 1 at a price of $10 per unit and 10 units of good 2 at a price of €5 per unit. With an income of €175 he buys 3 units of good 1 at a price of €15 per unit and 13 units of good 2 at a price of €10 per unit. Do the actions of this consumer conform to the basic axioms of consumer behaviour?

Exercise 4.3 *Suppose a person has the Cobb-Douglas utility function*

$$\sum_{i=1}^{n} a_i \log(x_i)$$

where x_i is the quantity consumed of good i, and $a_1, ..., a_n$ are non-negative parameters such that $\sum_{j=1}^{n} a_j = 1$. If he has a given income y, and faces prices $p_1, ..., p_n$, find the ordinary demand functions. What is special about the expenditure on each commodity under this set of preferences?

Exercise 4.9 *A person has preferences represented by the utility function*

$$U(\mathbf{x}) = \sum_{i=1}^{n} \log x_i$$

where x_i is the quantity consumed of good i and $n > 3$.

1. *Assuming that the person has a fixed money income y and can buy commodity i at price p_i find the ordinary and compensated demand elasticities for good 1 with respect to p_j, $j = 1, ..., n$.*

Exercise 4.11 *Suppose an individual has Cobb-Douglas preferences given by those in Exercise 4.3.*

1. *Write down the consumer's cost function and demand functions.*