

Economics Tripos Part I Paper 1
Microeconomics
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Supervision 2: Consumer Theory 2

Short questions

1. Why is there a deadweight loss from taxation?
2. Can a subsidy ever be efficient?
3. Why is elasticity a useful concept? What types of elasticity are there?
4. Will consumers always spend more on a product if its price goes up?
5. Why is the labour supply curve backward bending?

Problem

6. Derive the Engel curve for the utility function

$$u(x, y) = \sqrt{(10 + x)(20 + y)},$$

where the price of x is 2 and the price of y is 1.

7. (Tripos 2011) A consumer lives for 3 years ($t = 1; 2; 3$) and earns 100 pounds at the start of each year. The interest rate is $i = 0.05$. Her utility is given by

$$U(c_1; c_2; c_3) = (c_1)^{1/3}(c_2)^{2/3}$$

where c_t is consumption in period t .

- (i) What is the present value of her lifetime income?
- (ii) How much will she choose to consume in period 3, and why?
- (iii) Find the optimal values of c_1 and c_2 .
- (iv) Suppose that the interest rate rises to $i = 0.10$. Find the new optimal values of c_1 and c_2 . Explain why your results have changed.
- (v) How do your answers to (iii) and (iv) change if utility were instead given by $U(c_1; c_2; c_3) = (c_1)^{2/3}(c_2)^{1/3}$?