

ECONOMICS 110/111*

Assignment #3

2011/2012

Due Dates and Notes:

- **DUE:** By **Friday November 18, 2:00 PM**. Completed assignments should be placed in the slot marked for your section in the white assignment collection box on the 2nd floor of Dunning Hall. Late assignments will not be accepted.
- Use the **Cover Page** when submitting assignments.
- **Group Work:** Maximum **four** per group, all students must be registered in the **same section of the same course**. Names must be in **alphabetical order** on the cover page.
- Graded work will be available for pick-up beginning on the afternoon of Friday December 2 in the Econ Distribution Center, Dunning Hall Room 334. You will require your **student card**.
- This assignment covers material from the Supplement Chapter “Other Household Decisions” (available on the *Reading List* page on the website) and from Chapters 7-9 of the text.

True, False, or Uncertain

[48 marks - 6 marks each]

Explain why each of the following statements is True, False, or Uncertain according to economic principles. **Use diagrams where appropriate.** Unsupported answers will receive no marks. It is the explanation that is important.

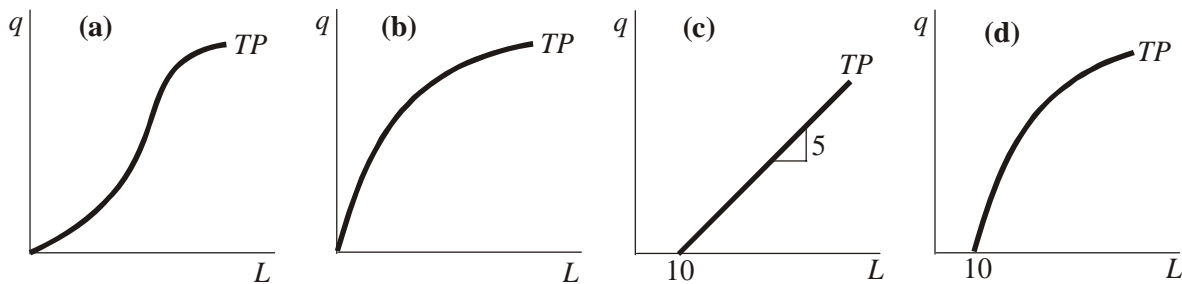
- A3-1.** An increase in the tax rate on interest income may actually increase the amount of saving by some individuals because present consumption is a normal good.
- A3-2.** Suppose 3 Econ profs quit their jobs to start the ethically dubious WillDoYourEconHomework.com. Assume they borrow all of the money needed to start the business. Revenue is \$250,000/year, and the interest on the loan is \$100,000/year. The new venture earns positive accounting and economic profit.
- A3-3.** The short-run marginal cost curve passes through the minimum point of the short-run average variable cost curve.
- A3-4.** If some technological advance increases the marginal product of labour in a firm, the firm’s marginal cost curve will shift down.
- A3-5.** If a firm decides to increase its production level, average costs are lower in the long-run than they are in the short-run.
- A3-6.** In the long-run, if economic profits are zero for a firm operating in a perfectly competitive industry, the firm has no incentive to produce and will exit the industry.
- A3-7.** Consider a perfectly competitive industry where the firms are identical, each with U-shaped short-run and long-run average cost curves. In the short-run, consumers bear part of the burden of a per unit tax, while in the long-run, consumers bear all of the burden.
- A3-8.** In a perfectly competitive industry, the long-run supply curve is more elastic than the short-run supply curve.

Problems [52 marks - marks for each part as shown]

A3-9. Suppose Lorne has 20 hours per day that can be spent either working or at “leisure”. Assume (at least initially) that Lorne earns all income from working at the after-tax wage rate of \$10/hour.

- (a) Using an indifference curve, illustrate Lorne’s decision if he decides to work 10 hours per day. Calculate, and in your diagram, identify, Lorne’s quantity of leisure, supply of labour, and consumption. What is the price of leisure? [5]
- (b) Suppose the government institutes a program that will pay Lorne \$100/day. However, if he works, he will have to pay back the government benefit with any labour income he earns until the full \$100 is paid back. Only after that will he be able keep any further labour income. Illustrate the new budget line in your diagram. How much labour will he supply? How much consumption will he have? Is he better off or worse off than he was in part (a)? [5]
- (c) Now suppose the government changes the program. It will still pay \$100/day, but now if he works, Lorne will have to pay only half of his labour income to the government until the full \$100 is paid back. Illustrate the new budget line in your diagram. If he chooses to work 4 hours under the new scheme, how much consumption will he have? Is he better off or worse off than he was in part (b)? Which version of the program costs the government more? [6]

A3-10. For each of the short-run production functions (Total Product curves) depicted below, briefly explain and graph corresponding marginal and average product curves. [3 marks each].



A3-11. Suppose that the total cost information for a firm is given below:

Output	0	1	2	3	4	5	6	7	8
Total Cost	40	90	130	160	200	250	320	410	530

- (a) Create a table with the following columns: output (q), total cost (TC), fixed cost (FC), variable cost (VC), marginal cost (MC), average variable cost (AVC), and average total cost (ATC). [8]
- (b) In one diagram graph FC , VC , and TC . In another diagram graph MC , AVC , and ATC . [6]
- (c) Suppose that this firm is one of 100 identical firms operating in a perfectly competitive market with demand conditions given by:

Price	30	40	50	70	90	120
Quantity Demanded	1000	950	900	800	700	550

Create and fill in a table with the following columns: price (p), firm supply (q^S), industry supply (Q^S), and quantity demanded (Q^D). What is the short-run equilibrium price in this market? equilibrium market quantity? output per firm? profits per firm? [5]

- (d) Assuming that these firms are at the long-run efficient plant size, what are the long-run equilibrium values for the price, market quantity, output per firm, profits per firm, and number of firms in the industry? [5]

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