

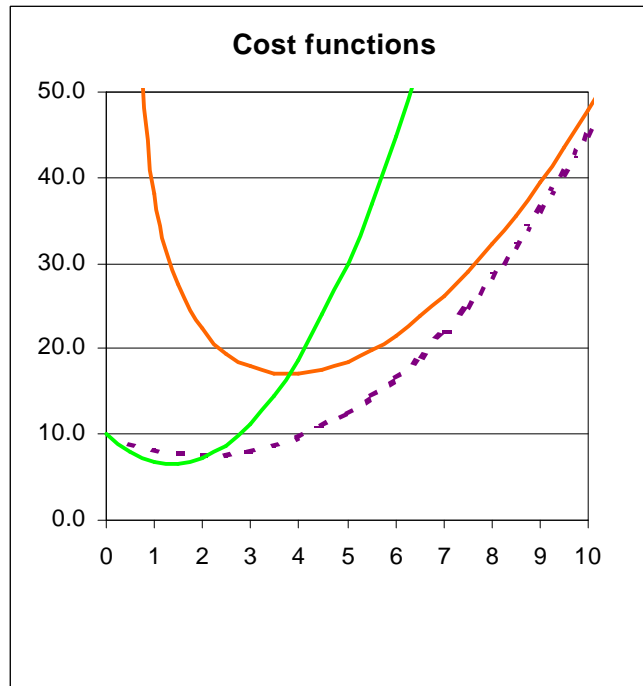
Quiz #2

Note:

1. Please start your answer in the space provided, but continue on the back of an adjacent page. Scrap paper is available in the front of the room.
2. I will be in room 308 PAC during the examination, but I will drop by the classroom from time to time.
3. Show your calculations in order that you may receive partial credit even if you make a numerical error.
4. The examination will end at 11:50. If you finish early, check over your answers carefully, place your test in the front of the table, and leave quietly.

Part I: [60 Points]

1. A firm has total costs of $C(q) = 30 + 10q - 2.5q^2 + 0.6q^3$
 - a. Fixed costs are \$____
 - b. The equation for average variable costs is:
 - c. The equation for marginal cost is:



2. On the graph label the marginal cost curve *MC*, the average total cost curve *ATC*, and the average variable cost curve *AVC*.

3. Competition! Please provide estimates for the following questions by reading the information off the graph.
- If the firm sells its product on a competitive market at a price of \$30, it would sell approximately ____ units in order to maximize its profits. The firm's profits would be approximately _____.
 - If the market price fell to \$15 the firm would produce approximately ____ units in the short-run. It would produce ____ in the long-run.
 - In long run competitive equilibrium (free entry and exit) the equilibrium price will be _____ and each firm will sell approximately _____ units of output.
3. Monopoly: Forget about competition. Suppose the graph on the preceding page shows the cost conditions for a monopolist with demand function $q = 10 - 0.2p$.
- Draw the demand function and the marginal revenue function on the graph.
 - In order to maximize profits the firm should sell approximately ____ units of output at price $p = \$$ _____.
 - Since average cost at this level of output is approximately _____, the firm's profits will be about \$_____.
 - Consumer surplus under the monopoly will be:
4. Congratulations, your loyal campaign support of the newly elected governor has won you an appointment on the Public Utility Control Commission, which is charged with regulating the monopoly described in question 3. Your task is to set the price so as to maximize the combined benefits produced by this firm for consumers and producers (the sum of consumer surplus plus profits). The graph reveals that the price that will achieve this objective is _____; the firm will produce ____ units of output and make profits of _____. Explain!

Part II [20 Points]

1. Listed below are several important accounting concepts. Place a *B* in front of each item that appears on the firm's Balance Sheet; place an *I* after each concept that appears on the Income Statement. Then place an *A* after each item that is an asset, an *L* in front of each item that is a liability, and an *N* after each item that is a component of net worth. (Note:: Some items may have several letters).
 - a. Accounts receivable
 - b. Accounts payable
 - c. Inventories
 - d. Sales Revenue
 - e. Corporate Profits Tax
 - f. Mortgage debt
 - g. Dividend payments
 - h. Advertising expense
 - i. Cash
 - j. Labor Cost

2. Wonderful, the accountants report that the Hot Dog Company made \$55,000 in profit before taxes!
Answer *either* a or b below:
 - a. An economist objects that this is only *accounting* profit. The *economic* profit is quite different. Explain the major items that account for the difference between "economic profit and "accounting profit."

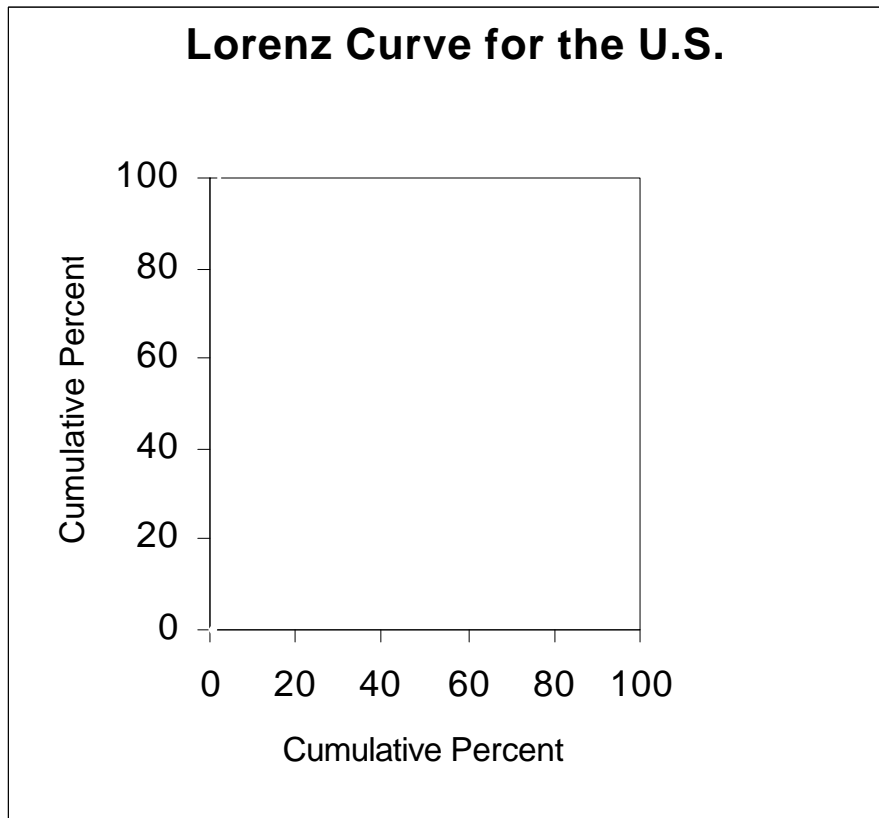
OR

 - b. Suppose that a change in the Tax Code allows the firm to depreciate its equipment over a five year rather than a ten year period. Would it be wise for the firm to take advantage of this new option? Explain.

Part III: [20 Points]

The data in the table concern the distribution of money income in the United States in 1993 (excluding capital gains). Use the data to construct a Lorenz Curve in the graph that follows the table. Please show any calculations and label the axes of the graph carefully.

Percent of Households	Percent of Total income
1st 20%	4.2%
2nd 20%	10.1%
3rd 20%	15.9%
4th 20%	23.6%
5th 20%	46.2%



Honors Option: [Please do not attempt this question until you have carefully checked your answers to the rest of the exam — 15 Points; no partial credit.]

An enterprise has production function $q = 100L^{2/3}K^{1/3}$. Here q is output per hour, L is the amount of labor employed by the firm and K is the number of machines. It costs \$1.00 to employ a worker for an hour; the rental cost of a machine is \$2.00 per hour. Determine the long-run total cost function for this firm. Show your Work!