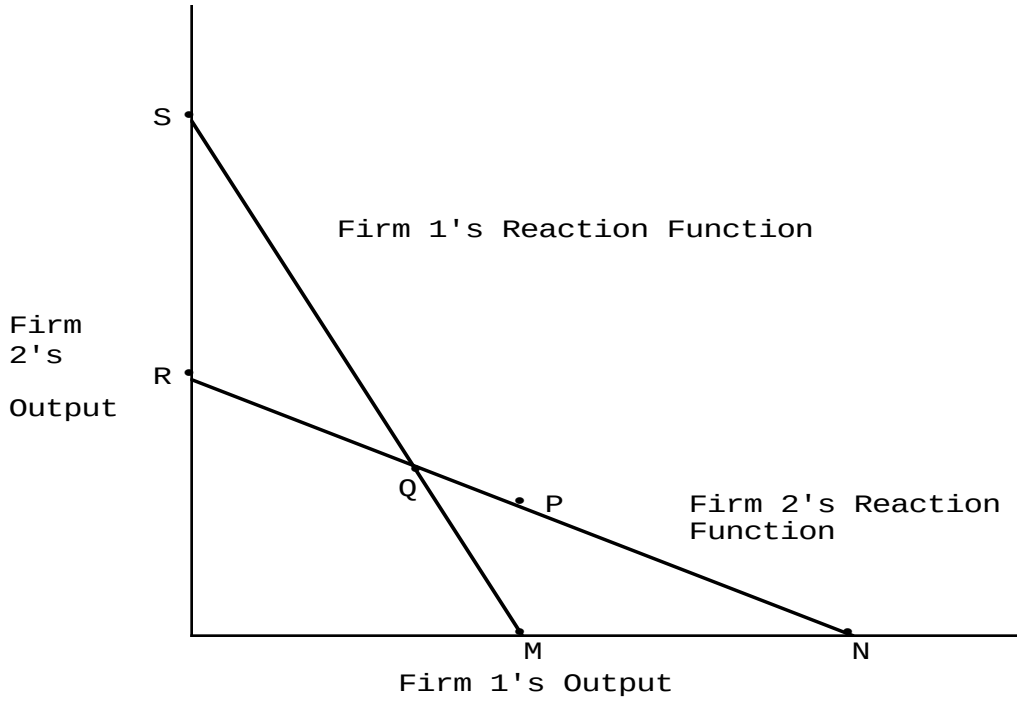
Econ 300 Section 6 Fall 1992
Comprehensive Exam Professor Arvan

Final

Part I. Multiple Choice (80 points): For each of the following choose the letter that corresponds to the best answer.

Questions (1) - (4) refer to the following diagram.



1. Firm 2 produces the monopoly output at point:
   a) M.
   b) N.
   c) P.
   d) R.

2. The Cournot equilibrium occurs at point:
   a) M.
   b) P.
   c) Q.
   d) R.

3. Firm 1 produces enough to keep firm 2 from producing at point:
   a) M.
   b) N.
   c) P.
   d) R.

4. Firm 1 acts as a Stackelberg leader at point:
   a) M.
   b) P.
   c) Q.
   d) S.

5. In a Prisoner’s Dilemma game:
   a) A player’s best response depends on the rival’s strategy.
   b) The unique equilibrium entails cooperation.
   c) There is more than one equilibrium.
   d) Each player has a dominant strategy.

6. In the Bertrand duopoly model:
   a) Each firm takes its rival's reaction function as given.
   b) The strategic variable is price.
   c) The leader claims the lion's share of the market.
   d) Each firm take its rival's output as given.

7. Limit pricing is a form of:
   a) Tacit collusion.
   b) Strategic entry deterrence.
   c) Price discrimination.
   d) Bertrand Competition.

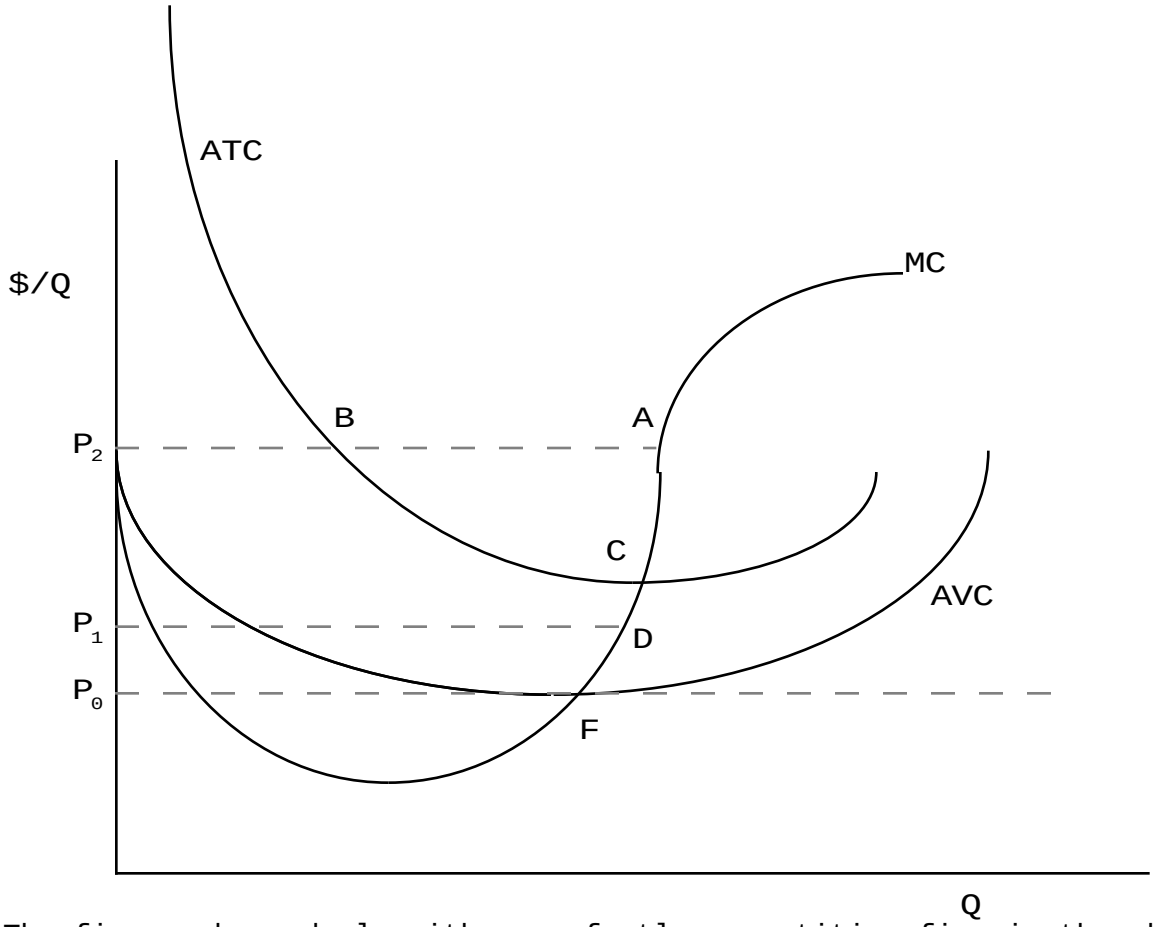
8. An isoquant depicts:
   a) Bundles of capital and labor that yield constant cost for the firm.
   b) Bundles of capital and labor that yield constant output for the firm.
   c) Bundles of input and output that yield constant profit for the firm.
   d) Bundles of final goods that yield constant satisfaction for the consumer.

9. Which of the following relationships must hold between the average product of labor (APL) curve and the marginal product of labor (MPL) curve?
   a) If MPL is rising, APL must be rising.
   b) If MPL is rising, APL must be greater than MPL.
   c) If APL is rising, MPL must be greater than APL.
   d) If APL is rising, MPL must be less than APL.

10. A perfectly competitive firm makes positive economic profit in the short run. The product price is $10 and the firm sells 20 units at this price. From this information you can tell:
   a) Average total cost is greater than $200.
   b) Total cost is less than $200.
   c) Marginal cost is less than $10.
   d) Marginal cost is greater than $200.

11. Which of the following is not a necessary condition for perfect competition in the product market?
   a) All inputs are traded in competitive factor markets.
   b) There are large economies of scale.
   c) There is free access to technology.
   d) There are no artifical entry barriers.

12. Suppose a monopolist uses a two-part tariff to sell to a single, price-taking consumer The profit maximizing fixed charge:
   a) Equals the monopolist’s fixed cost.
   b) Equals the producer surplus, for the given unit charge.
   c) Equals the consumer surplus, for the given unit charge.
   d) Equals the social surplus, for the given unit charge.



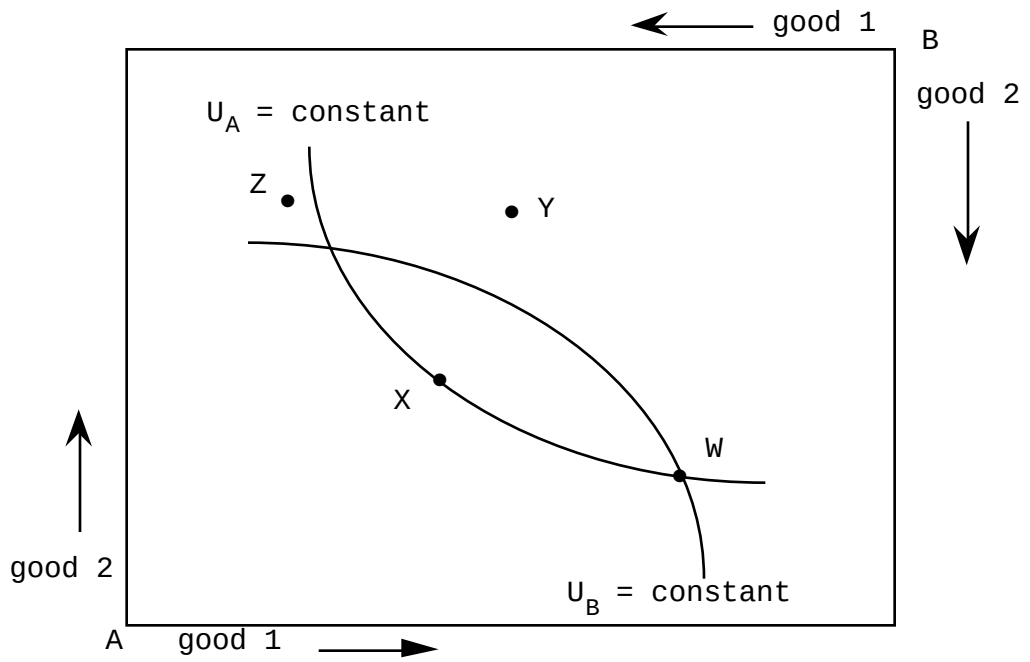
The figure above deals with a perfectly competitive firm in the short run. Questions (13) - (15) refer to this figure.

13. When the price of the product is given by P_2:
   a) The firm makes negative economic profits from producing and therefore shuts down.
   b) The firm breaks even by operating at point B.
   c) The firm covers variable cost but makes an economic loss and operates at A.
   d) The firm makes economic profits and operates at A.

14. When the price of the product is given by P_1:
   a) The firm makes negative economic profits from producing and therefore shuts down.
   b) The firm breaks even by operating at point D.
   c) The firm covers variable cost but makes an economic loss and operates at D.
   d) The firm makes economic profits and operates at D.

15. The supply curve of the firm is given by:
   a) The marginal cost curve.
   b) The segment OP_0 and the marginal cost curve where it lies above F.
   c) The segment OP_0 and the marginal cost curve where it lies above C.
   d) The average variable cost curve.

Questions (16) and (17) refer to the following diagram.



16. Suppose that the initial allocation is at point W and that A & B engage in barter. Then a candidate point they would trade to is:
   a) X, because it represents a Pareto improvement over W.
   b) Y, because it represents a Pareto improvement over W.
   a) Z, because it represents a Pareto improvement over W.
   a) They would not trade away from W.

17. A point that is Pareto dominated by W is:
   a) X.
   b) Y.
   a) Z.
   a) There is no point indicated that is Pareto dominated by W.

18. If a consumer's cross-price demand curve is positively sloped:
   a) The goods are substitutes.
   b) The goods are perfect substitutes.
   c) Both goods are complements.
   d) The goods are perfect complements.

19. When marginal revenue is 0:
   a) Demand is price inelastic.
   b) Demand is income inelastic.
   c) Demand is unitary price elastic.
   d) Demand is unitary income elastic.

20. If insurance is priced in an actuarial fair manner:
   a) A risk-averse consumer will buy full coverage.
   b) A risk-averse consumer will buy less than full coverage.
   c) A risk-averse consumer will buy more than full coverage.
   d) A risk-loving consumer will buy full coverage.

Part II. Problems (50 points): Answer both of the following problems. A long answer is not necessary to receive full credit. But you must justify your work. Unsubstantiated conclusions will receive little credit.

1) Suppose that a regulator who is interested in maximizing social surplus has to decide whether or not to approve of a vertical merger in the widget industry. The regulator knows that widgets are consumed exclusively in the home and the demand for widgets exhibits no income effects. The widget industry is characterized by a single producer of widgets. This firm employs a one input technology to produce widgets. The input is called gadgets. The very simple production function for the widget producer is given by

$$W = G$$

where G is the amount of gadget input and W is the amount of widget output. The widget producer is a monopolist in the output market and a perfect competitor in the input market. Gadgets are supplied by a single producer. This producer faces unit cost equal to c and is a monopolist in the gadget market. The regulator must decide whether the monopoly that the gadget producer enjoys, in effect, "disciplines" the widget producer from acting less like a monopolist, since the widget producer clearly makes less profit in this case than it would were it to own the gadget producer.

a) Should the regulator approve of the merger? (Hint: Determine the equilibrium prior to the merger and again after the merger occurs.)

b) Suppose the regulator allows the merger to take place. Indicate the maximum price the widget producer is willing to pay to buy out the gadget producer. Indicate the minimum price the gadget producer is willing to accept to sell the firm to the widget producer.

2. A common assumption in Keynesian macroeconomics is that the rate of savings is positively related to the real rate of interest. This assumption underlies the development of the notorious IS curve. In this question we investigate the microeconomic foundations behind this assumption.

Consider a typical consumer who consumes in two periods. The consumer's income in each of the two periods is exogenously specified as is the market rate of interest which is denoted by i. (This question abstracts from any consideration of inflation so you may think of i as being evaluated in real terms.) Finally, suppose that the consumer has preferences defined over consumption in both periods.

a) By introducing any symbols, diagrams, and/or terminology that you deem appropriate, write down the problem which determines the amount of savings that is optimal for this consumer.

b) Is it true in general that an increase in i leads to an increase in savings for this consumer? Does your answer depend on whether the consumer is a borrower, a saver, or neither? Does it depend on whether current and/or future consumption is a normal good?