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1 Review

- All about the midterm

2 Problems: Consumer Theory and Producer Theory

1. Given the above information, what is the cost of one unit of capital to Alice?
 - (a) How much labor is required to produce the first unit of output? What is the cost of a unit of labor? (Hint: you can figure this out using marginal cost and the marginal product of labor.)
 - (b) Fill in the blank cells in the table. Check to make sure that your numbers are consistent with each other!
 - (c) Does Alice's factory exhibit diminishing marginal productivity of labor? How do you know?
 - (d) Is Alice's factory operating in the short run or the long run? How do you know?
 - (e) If the price of a widget was \$2.50, what quantity of widgets would Alice's factory produce (assuming that Alice's decisions do not affect the market price)? How large would her profit or loss be?
 - (f) What price is the shutdown price for Alice's factory? (Hint: it is not \$2!)
 - (g) If the above costs were also true in the long run, what price would widgets have to be sold for in order for Alice to break even?
 - (h) What quantity minimizes Alice's average total costs?
2. HW #4 Question 7 Black Swan Clothing is a firm producing costumes for residents in Econ Town. The total cost of the firm is given by $TC = 0.5q^2 + q + 2$ where q is the number of costumes produced by Black Swan Clothing. You are also told that the marginal cost curve (MC) for Black Swan Clothing is given by the equation $MC = q + 1$. Furthermore, assume Black Swan Clothing takes prices as given when choosing the quantity it will produce.
 - (a) How many costumes will the firm produce when price, P , is given as $P = \$2$? How many costumes will the firm produce is $P = \$1$?
 - (b) Draw a graph that represents Black Swan Clothing's marginal cost curve (MC), average variable cost (AVC) and average total cost (ATC) curves. Measure marginal cost, average variable cost, and average total cost on the vertical axis (all three of these cost curves are measured as "\$ per unit"). Measure the quantity of costumes on the horizontal axis. Label your graph carefully and completely.
 - (c) What is the firm's breakeven point? Mark it on your diagram from (b).
 - (d) Suppose there are 10 firms in the market, including Black Swan Clothing, which all have the same cost curves. Assume that this market is perfectly competitive. What is the market supply curve given this information? (Hint: first find Black Swan Clothing's supply curve, then think about the market supply curve.)

Table 1: Table 1

Year	CPI (Base Year = 1990)	CPI (Base Year = 1980)
1980	50	
1990	100	A
2000	125	
2009	150	B

- (e) Suppose demand is given by the equation $Q_d = 50 - 10P$. Calculate the equilibrium price and quantity. Is the market in long run equilibrium at this price and quantity? Explain your answer.
- (f) Suppose demand increases to $Q_d = 90 - 10P$. What is the new market equilibrium price and quantity in the short-run?
- (g) Given the situation in how much profit in the short-run does Black Swan Clothing make now? What do you predict will happen to the number of firms in the long run? Explain your prediction.
- (h) If demand is as is given in (f), how many firms will be in the market in the long run, assuming all firms still have the same cost curves as Black Swan Clothing? (Hint: what does the price have to be if the market is in a long run equilibrium?)
3. 1. If the U.S. Government increases the size of a tariff on a good that is already being imported with a tariff, the government's tariff revenue from this good will increase for sure. a. True b. False
4. 2. If the economy is closed, and the government increases the size of an excise tax on a good that is already being taxed, the government's tax revenue will increase for sure.
5. 3. Suppose the price elasticity of demand for rice is 0.5, while the cross-price elasticity of demand between rice and potatoes is 0.7. Holding everything else constant, if the price of rice increases by 40%, the demand for potatoes will
- (a) increase by 20%
- (b) decrease by 20%
- (c) increase by 28%
- (d) decrease by 28%
6. 4. Solve for A and B respectively.
7. Suppose your nominal salary was \$50,000 in 2000. What is the minimum nominal salary you must receive in 2009 in order for you to maintain the same real salary you had in 2000?
8. 6. Arthur Dent earns \$52, all of which he spends on shirts and shoes. He buys 5 shirts and 6 pairs of shoes. After buying these goods, his marginal utility of buying another shirt is 12 and his marginal utility of buying another pair of shoes is 3. Shirts cost \$8 each and a pair of shoes costs \$2. It can be concluded that Arthur
- (a) is spending too much money on shirts and not enough money on shoes.
- (b) is spending too much money on shoes and not enough money on shirts.
- (c) is spending his income on shirts and shoes in such a way as to maximize his utility.
- (d) can feasibly increase his utility by buying more shirts and more shoes.