Final Exam
120 minutes
Econ 1101: Principles of Microeconomics
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December 18, 2006

Name: _____

TA's Name: _____

Section Number: _____

(TA's Name and Section Number are worth 4 points, **not** bonus.**)**

Points are allocated on a 200 point scale.

Clearly highlight/circle solutions.

If you need more space, use the back of the page. Clearly state where your work/answer are.

Calculators are NOT allowed. You may leave answers as fractions.

Fully label all graphs.

Read each question carefully and be sure to answer all parts of every question.

There should be 12 pages including the cover sheet.

Question 1 (6 points). State the First Welfare Theorem of Economics

Question 2 (10 points).

Reservation Prices and Costs in Econland

Name of D Person	Reservation price for one widget ($)	Cost to make one widget ($)	Name of S Person
D1	9	1	S1
D2	8	2	S2
D3	7	3	S3
D4	6	4	S4
D5	5	5	S5
D6	4	6	S6
D7	3	7	S7
D8	2	8	S8
D9	1	9	S9
D10	0	10	S10

None of the allocations below are Pareto efficient. In each case, propose a Pareto improvment.

(a) An allocation where S8 produces a widget but S3 does not.

(b) An allocation where D1 and D7 consume widgets but D3 and D10 do not.

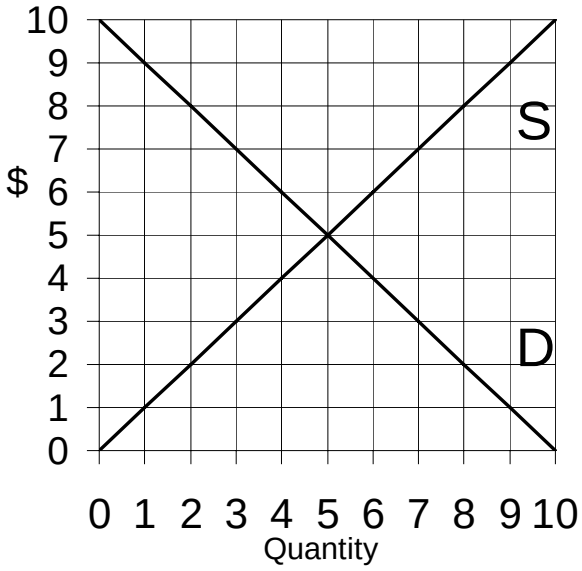
(c) An allocation where S1 produces a widget and gives it to D1 and no other widgets are produced and consumed.

Question 3 (44 points). This question asks you do determine the impact of various government policies in Econland. The policies are (i) a price floor of $7 with efficient rationing and (ii) a tradeable production quota policy (also called supply management) with a total quota of 3, with S4, S5, S6 each allocated one quota unit each.

(a) Complete the table below. (In the case of tradable production quotas P^S is the price the seller receives subtracting out whatever the seller has to pay to buy quota. Producer surplus does not include revenues obtained on sales of quota.)

	Free Market	(i) $7 price floor (efficient rationing)	(ii) Supply Mgmt Quota=3 allocated to S4,S5,S6 quota is tradable
Q	5		
P^D	5		
P^S	5		
Consumer Surplus	12.5		
Producer Surplus	12.5		
Gov't Surplus	0		
Quota owner surplus	0		
Total Surplus	25		

(b) On Graph 1 below illustrate CS and PS in case (i), a $7 price floor with efficient rationing.



Graph 1: CS and PS with $7 price floor

(c) Both government policies have lower total surplus than the free market for the same reason. What efficiency condition do they both violate?

(d) For policy (i) above, a $7 price floor, we assumed rationing is efficient. Suppose instead that the rationing was inefficient. Specifically, suppose the high cost producers get the sales. Consumer surplus would then be _____, producer surplus would be _____, and total surplus would be _____. What two efficiency conditions are violated with this allocation?

(e) For policy (ii) above, tradable production quota, the equilibrium price of quota would be _____. Note that in this allocation, S6 is initially allocated one quota unit. Explain why S6 likes the quota system more than the free market, while S1 prefers the free market to the quota system.

(f) In the above analysis we have assumed no externalities. Assume for the remaining parts of this question that there is a negative externality of $4 per widget consumed. The socially efficient quantity of widgets is then _____. At this quantity, the social marginal cost of one more unit of output equals _____ and the social marginal benefit equals _____.

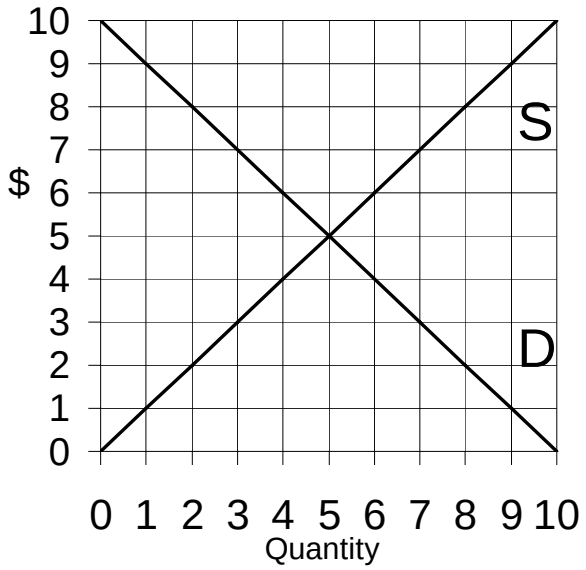
(g) Suppose for policy (iv), the production quota that are allocated to S4, S5, S6 are not tradeable. Explain why this would reduce total surplus compared to the policy where quota are tradable.

Question 4 (14 points). Let's put Econland in the the world economy. Suppose the world price of widgets is $2. Suppose Econland is small relative to the world market so that its trade policy has no effect on the world price.

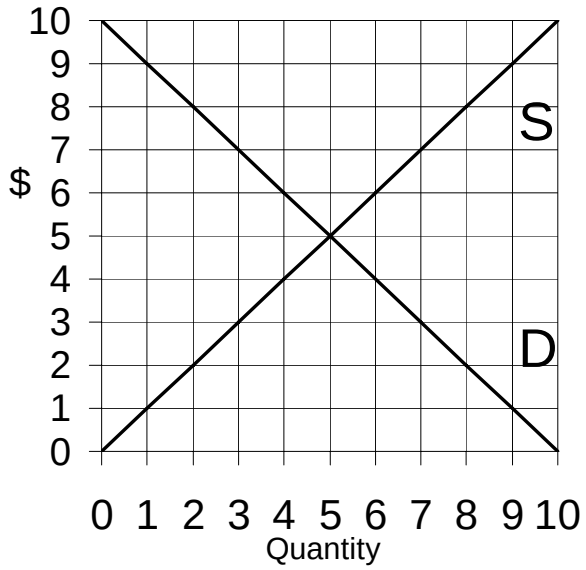
(a) Suppose there is a $2 tariff on widgets. Then the quantity of widgets imported is _____. Illustrate and label in graph 2 below (i) the government revenue collected by the tariff and (ii) the loss in total Econland surplus from the tariff compared to no tariff.

(b) What are the two reasons total Econland surplus declines with the tariff compared to no tariff?

(c) Suppose instead of a tariff, there is a quota limiting imports to two units. Illusrate in graph 3 below the total loss in Econland surplus compared to no quota.



Graph 2: ΔGS and Econland ΔTS from $2 tariff



Graph 3: Econland ΔTS from quota

(d) Suppose two countries were identical so there are no differences in comparative advantage. Explain why there still might be gains from trade.

Question 5 (20 points). Tom consumes widgets and smigets in fixed proportions, two widgets for every one smiget. His income is \$24. The price of widgets is p_{widget} = \$4. The price of smigets is p_{smiget} = \$4

(a) In the graph below, draw in Tom's budget contraint and label it BC1. Put widgets on the horizonal axis. The opportunity cost of one more widget in terms of smigets is _____.

(b) Tom's optimal consumption bundle is Q_{widget} = _____ and Q_{smiget} = _____.

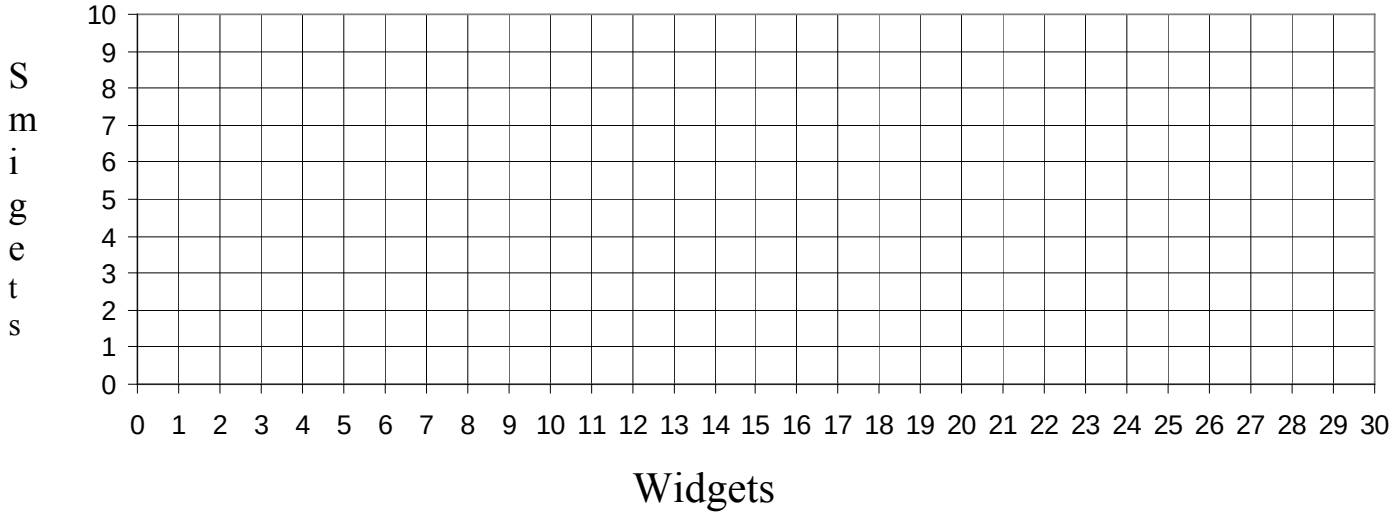
(c) Illustate Tom's optimal consumption bundle from (b) in the graph and label this point A. Draw Tom's indifference curve through A. Label it IC1. Draw in a second indifference curve through a point that Tom likes less than point A. Label this IC0.

(d) Suppose the price of widgets falls to p_{widget} = \$1, everything else the same. Draw the new budget constraint and label it BC2. Illustrate the new optimal consumption bundle and label it point C.

(e) The **total** effect on the quantity of widgets demanded from the price decrease is _____ widgets. This can be broken down into a substitution effect of **0 widgets** plus an **income effect** of _____ widgets.

(f) Let's see why the substution effect is zero here. Pivot the budget constraint around point A in the appropriate way and **illustrate** this in the figure. Label it "BC Pivot."

True or False (circle one). Point A remains the optimal point even after we pivot the budget contraint around point A.



Question 6 (26 points).

A monopolist faces the demand curve illustrated below.

(a) **Draw** in the marginal revenue curve and label it.

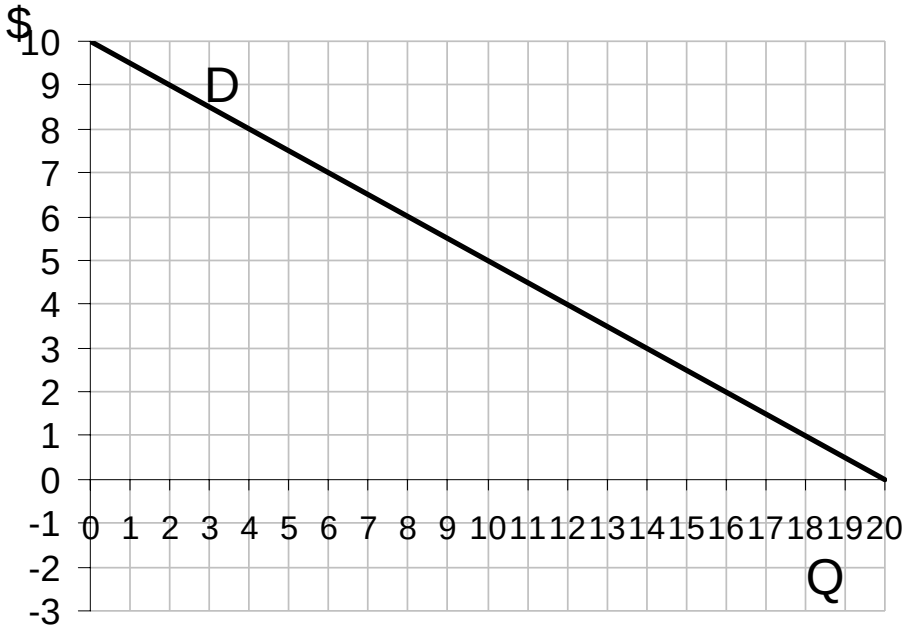
(b) Why is marginal revenue less than price for a monopolist?

(c) Suppose the marginal cost (MC) and average variable cost (AVC) both equal 2 for all quantity levels, MC = AVC = 2. Draw the MC curve in the figure and label it.

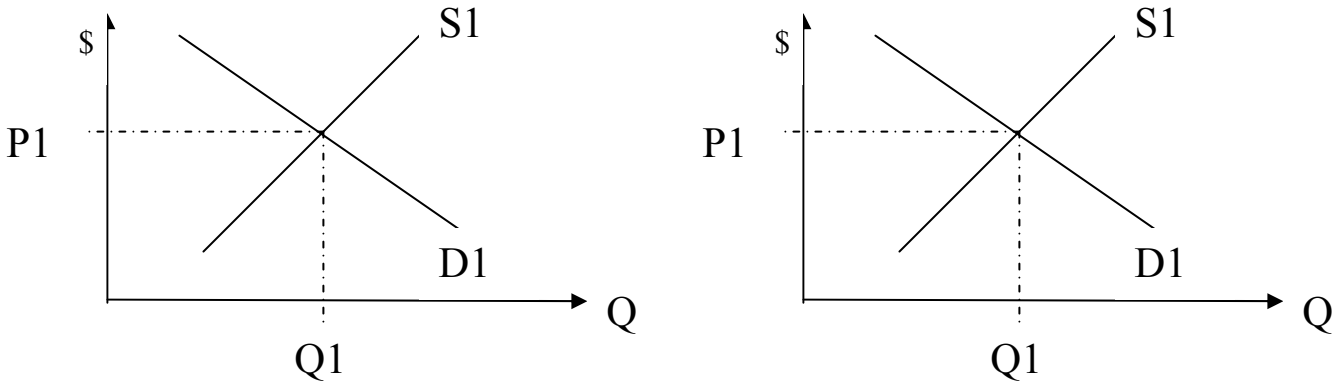
(d) The profit maximizing monopoly quantity is _____ and price is _____. **Label** these on your graph.

(e) Suppose the fixed cost is 16. At Q = 4, average fixed cost (AFC) is ____, average variable cost (AVC) is **2** and average total cost (ATC) is _____. At Q = 8, AFC = _____, AVC = 2, and ATC = _____. At Q = 16, AFC = _____, AVC = 2, and ATC = _____. Graph ATC below at Q = 4, Q = 8, and Q = 16. Connect the points and label the curve the ATC curve.

(f) The monopoly profit is _____. Illustrate the monopoly profit in the figure below.



Question 7 (14 points).



(a) In the graph on the left, shift up demand up and to the right . Label this D2. Label the new equilibrium price and quantity P2 and Q2. Because of the shift in demand:

Price: increases / decreases / stays same (circle one)
Quantity: increases / decreases / stays same (circle one)

(b) One reason demand could shift up and to the right is income increases and the good is normal. What are two other reasons demand could shift up and to the right?

(c) Suppose supply shifts to to the right. Suppose demand also shifts and the new equilibrium price increases. Think about how demand must shift in order for this to happen. On the graph on the right, illustrate a right-ward shift in supply to S2 and a shift in demand to D2 such that the new equilibrium price P2 is higher than P1.

(d) Relate the analysis in part (c) to what has happened to the skill premium in the past two decades. Specifically, for the market for skilled labor, specify factors that have shifted supply and demand over this period.

Question 8 (32 points). Cindy works 5 hours a day. She can make 4 apples an hour or 8 oranges an hour. George works 20 hours day. He can make 2 apples a hour and 1 orange an hour. The figures below show the indifference curves for Cindy and George.

(a) Illustrate Cindy's and George's production possibility frontiers (ppf) in the graphs in the next page. (Cindy on the left, George on the right). **Label** the ppf curves.

(b) Circle the correct answer:

Who has an **absolute** advantage in making apples? Cindy or George

Who has a **comparative** advantage in making apples? Cindy or George

(c) Suppose trade is impossible so each is in autarky. So for each, production equals consumption. Determine the utility maximizing choice for Cindy and label it point A. At this choice Cindy produces and consumes

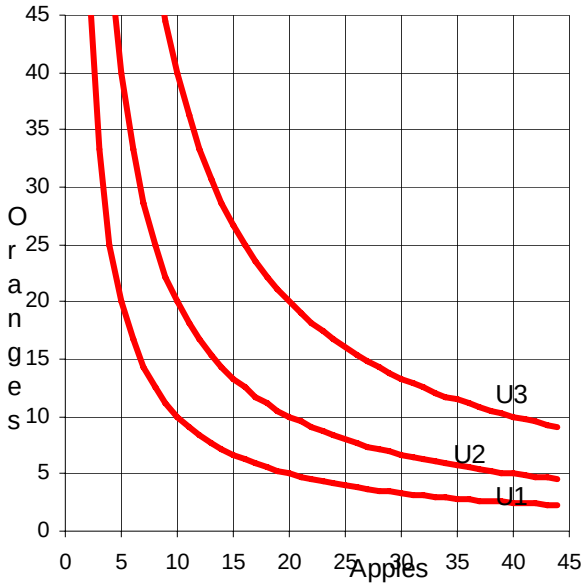
_____ apples and _____ oranges.

Determine the utility maximizing choice for George and label it point X. At this choice George produces and consumes

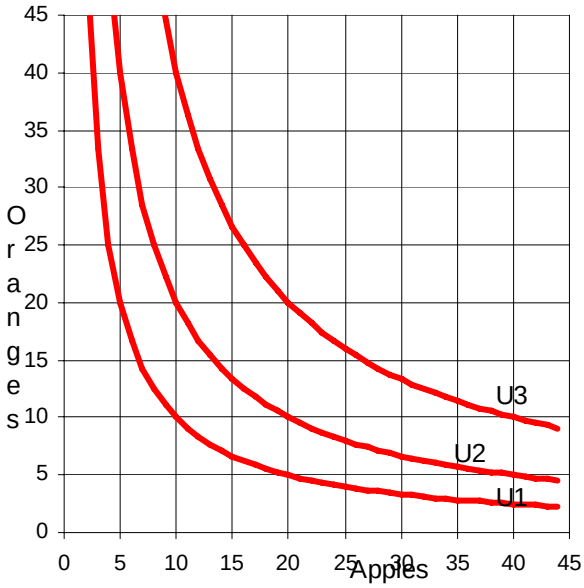
_____ apples and _____ oranges.

(d) Suppose trade is costless. Suppose in world markets, the price of **one apple** in terms of oranges is **one orange**. Suppose that each individual specializes in production according to his or her comparative advantage. **Draw** and **label** the budget constraint of each individual in this case.

When the price of one apple is one orange, Cindy would produce _____ apples and _____ oranges. Label this point B in the graph. In the world market, she would sell/buy (circle one) _____ apples and she would sell/buy (circle one) _____ oranges. She would consume _____ apples and _____ oranges. Label this point C in the graph.

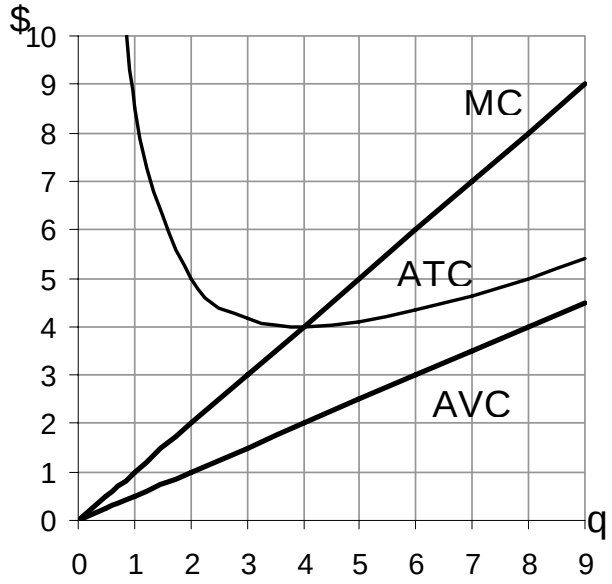


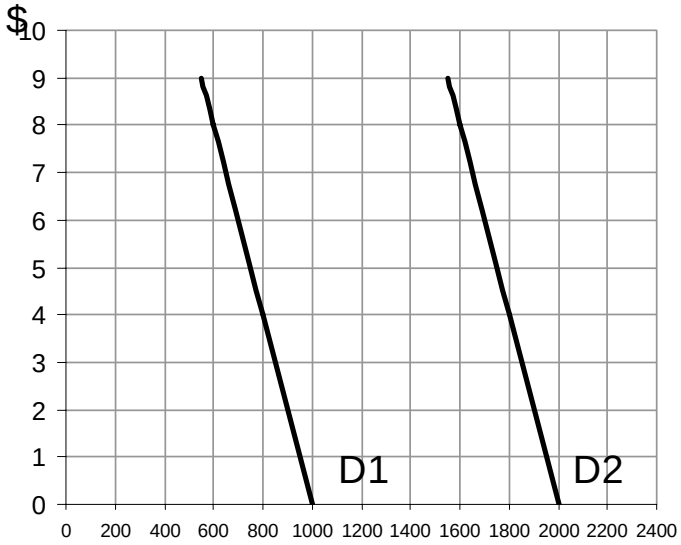
Cindy



George

Question 9 (30 points).
Each widget firm has the cost structure illustrated in the figure on the left below. Two different cases for industry demand are illustrated in the figure on the right. Please use the lines in the graph paper to determine the numbers you need to do the problem. .





(a) Cost Structure of Firm **Draw** in the long-run supply curve on the right-hand Industry Level Variables side graph and label it $\mathbf{S^{LR}}$.

(b) Two possibilities for demand are illustrated on the right, a low demand curve D1 and a high demand curve D2. Determine the long-run competitive equilibrium for each case by completing the table below:

		Demand	
Variable	**Definition**	**D1**	**D2**
P^{LR}	Long-run Industry Price		
Q^{LR}	Long-run Industry Quantity		
q^{LR}	Long-run output per firm		
N^{LR}	Long-run number of firms		

(d) Fill out the table below. The first column to be completed is the short-run supply for a *firm* in the industry for 4 different prices. The second column is the short-run *industry* supply when the number of firms is *fixed* at N = 200.

Price	Firm Supply (Short-Run)	Industry Supply (Short-Run with N = 200 firms)
4		
6		
8		

(e) **Plot** the short-run industry supply when N = 200 firms is fixed in the short run and label it $S^{SR}(N=200)$. Suppose that the demand is given by D2. The short-run equilibrium price is _____. In the short run, the profit of each firm is _____.

(f) Define Marginal Cost (MC).

(g) Suppose at a particular quantity Q, MC is greater than ATC. What can we say about the ATC curve at that point?

Bonus Points (8 points):

1. As explained by our guest lecturer, Turkey has comparative advantage in the production of which group of goods (circle one entire group):

a. wine, cheese, crackers

b. cars, boats, bikes

c. raisins, hazel nuts, figs

d. micro chips, TV's, DVD's

2. LIST TWO SPECIFIC reasons why Turkey has comparative advantage in the production of the goods given above.

Reason 1:

Reason 2:

3. According to the special lecturer, one specific barrier to entry in the Mexican telephone market is:

a. The Mexican government only allows one firm in this market

b. Telmex controls the necessary infrastructure, the telephone network

c. There are none

d. Telmex has a patent on necessary technology

e. All of the above