Final Exam
ECNS204
Snowmester 2020
Exam is due by 11am on Friday, January 8th
Submit to TA at alectruax@gmail.com

Name_____

1.) Suppose the output of jumbo shrimp per hour from a public shrimp bed is given by the following production function where L represents the labor input and TP represents the total product, or output (per hour), in shrimp.

L	1	2	3	4	5	6	7	8 or more workers
TP	6	14	20	25	27	29	30	30

Assume the shrimp sell for $1 each and this price is unaffected by total output from this bed. Assume all the shrimp gatherers can earn $6 per hour in their next best alternative.

a.) (5 points) Suppose the shrimp bed is "common property", i.e. no one owns it, and anyone who wishes can collect shrimp and share equally in the output. Explain why common property leads to a shrimp harvest that is "too large", i.e. an inefficient (explain what this means) level of production. How many people will farm in this case?

b.) (5 points) Suppose the shrimp bed is privately held. How many workers would the owner hire, and would it be an efficient (explain what this means) allocation of resources?

c.) (5 points) What additional effect might common property have on efficient production of shrimp over time, that is, on into the extended future?

2.) Bill and Ted find themselves on a deserted island. The only two activities available are fishing and hunting rabbits. In a full day, Bill can catch 2 fish or 8 rabbits; in the same time, Ted can catch 8 fish or 4 rabbits. Activities can be divided with no loss of efficiency. When left to their own devices, Bill consumes 4 rabbits and Ted consumes 1 rabbit.

a.) (5 points) Given their current rabbit consumption, how many fish can each person consume, acting alone?

b.) (5 points) What are each individual's marginal costs of fishing and hunting rabbits? Who has the comparative advantage in fishing? In hunting?

c.) (10 points) Explain how Bill and Ted can improve their standard of living through specialization. That is, what are their gains from specialization? What role, if any, does one person's absolute advantage play in your answer? Also, illustrate graphically the combined production possibility frontier along with the bundle of goods in the economy when they specialize and the bundle of goods without specialization. ***No graph, no points.***

3.) a.) (10 points) For a two-firm industry, illustrate graphically that the total costs of production must necessarily increase when marginal costs are not equal. ***No graph, no points.***

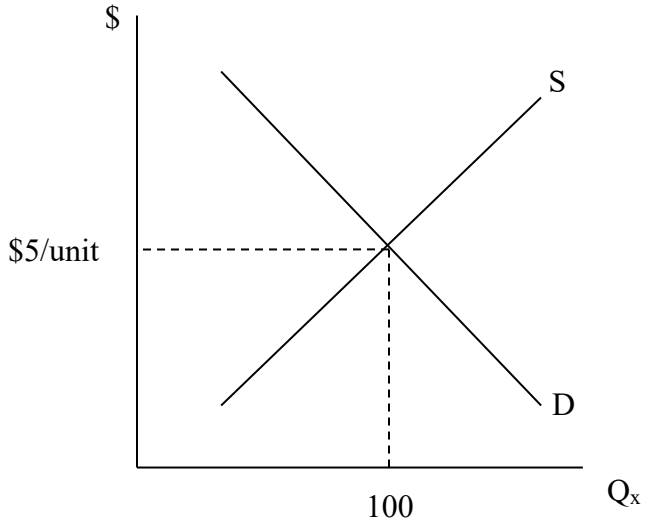
b.) (5 points) Explain why, in a competitive market, total cost of production is the lowest possible.

4.) (10 points) We can all agree that crimes such as murder, rape and aggravated assault are the most serious of offenses. Why is it then that police departments allocate resources to enforce laws aimed at reducing petty offenses such as jaywalking, possession of marijuana, vandalism, etc.?

5.) (15 points) Suppose Tyler earns $15/hour and at this wage he chooses to work 8 hours/day. Now, suppose that Tyler has received a raise to $20/hour. Will he choose to work more or fewer hours per day under this higher wage rate? Or, given this information, is it not possible to tell whether he will work more or less? What does your answer depend on?

Support your answer with an indifference curve and budget constraint analysis. ***No graph, no points.***

6.) Consider an efficiently operating market for good x, as depicted in the graph below:

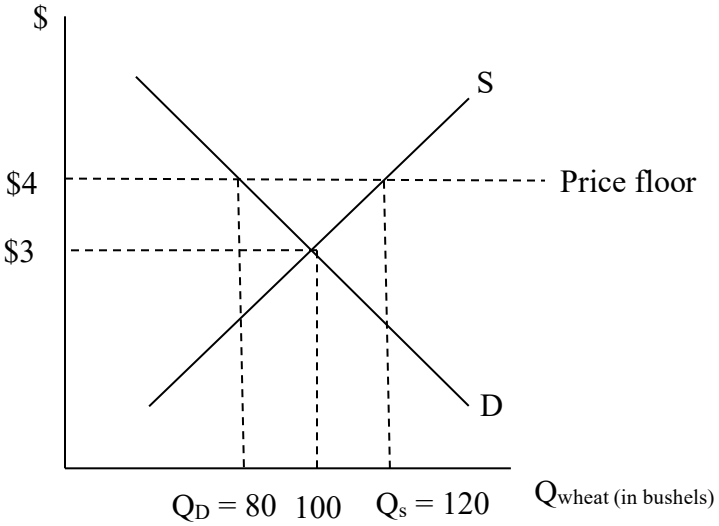


a.) (5 points) Suppose the government imposes a per-unit subsidy in this market equal to $1/unit and that the new quantity exchanged is equal to 120 units after the subsidy is put into place. Illustrate this graphically and make sure to indicate the subsidy amount.

b.) (5 points) Show graphically, the total amount of the subsidy that is paid by taxpayers. How much is the total subsidy?

c.) (5 points) Is the market efficient with the subsidy? Support your answer graphically by showing whether or not there is a DWL.

7.) Consider the graph from our lecture on "Surpluses" from the Chapter 5 lecture slides (slides 18-19):



a.) (5 points) Is this market efficient with the price floor in place? If not, indicate the DWL graphically.

b.) (5 points) To maintain the price floor, the government must buy up the surplus from producers at the price of $4/bushel. When the government buys up the surplus it represents a cost to taxpayers. How much, in total, is the cost to taxpayers of the price floor policy?

8.) Consider a firm seeking to maximize profits by employing labor (L) and capital (K) to produce good X. Suppose the cost of a unit of labor is equal to $60/hour and the cost of a unit of capital is equal to $30/hour. Further, suppose that the market price for a unit of good X is equal to $15.

The following table represents the marginal products of labor and capital that the firm faces:

Q_L	MP_L	Q_K	MP_K
1	10	1	12
2	9	2	10
3	8	3	8
4	7	4	6
5	6	5	4
6	5	6	2
7	4	7	0
8	3	8	0

a.) (10 points) To maximize profits, how many units of labor will the firm hire and how many units of capital will they employ?

b.) (5 points) Given your answer to part a.), show mathematically that the firm is maximizing profits by "equating the margins."