Whitman College
Econ 102
Exam 1
September 22, 2011

Write all answers on your exam. **Show all of your work.** The exam ends at 11:55.

1. Read parts (a)-(j) before answering any of these questions.

(a) (5pts) On the grid below, draw a Production Possibilities Frontier for food and clothing that exhibits the law of increasing opportunity cost. Be sure to label your axes.

(b) (1pt) On your graph, find a point that represents an efficient level of production, and label that point "E".

(c) (1pt) On your graph, find a point that represents an inefficient level of production, and label that point "I".

(d) (1pt) On your graph, find a point that represents a level of production that is not feasible, and label that point "N".

(e) (2pts) Based on your graph, what is the opportunity cost of producing the first unit of food?

(f) (2pts) Based on your graph, what is the opportunity cost of producing the sixth unit of food?
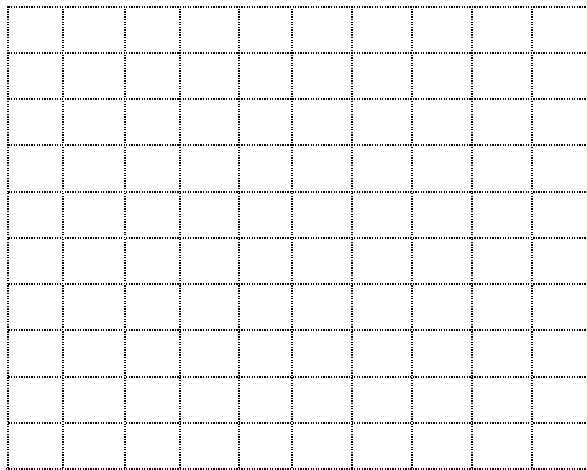
(g) (4pts) On the grid below, draw a Production Possibilities Frontier for medication and education that does **not** exhibit the law of increasing opportunity cost. Label your axes.
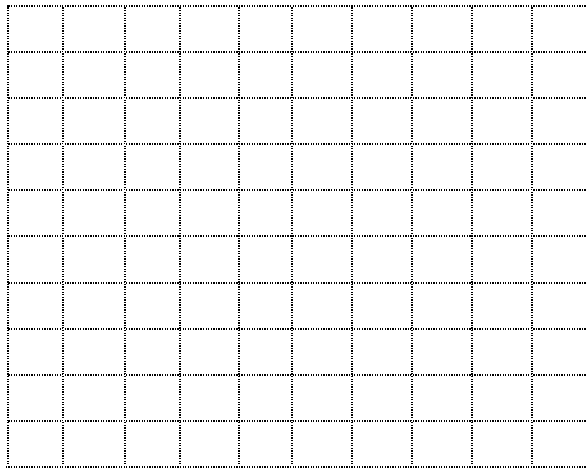
(h) (2pts) Based on your graph, what is the opportunity cost of producing the first unit of medication?

(i) (2pts) Based on your graph, what is the opportunity cost of producing the sixth unit of medication?

(j) (5pts) What causes the law of increasing opportunity cost?

2. (5pts) List the assumptions that define a perfectly competitive market.

3. Suppose a market for widgets is perfectly competitive and free of government intervention. Sellers' costs of production and buyers' values of consumption are given in the table below, in dollars. Each buyer may buy at most one widget and each seller may sell at most one widget. No fractional units of widgets can be traded. Use the data in the table to answer questions (a)-(i).

Buyer's ID Number	Buyer's Value ($)	Seller's ID Letter	Seller's Cost ($)
1	15	A	5
2	5	B	2
3	13	C	2
4	12	D	4
5	9	E	10
6	11	F	8
7	6	G	9
8	2	H	7
9	15	J	6
10	5	K	4

(a) (10pts) On the grid below, graph the supply and demand curves for widgets. Label your axes.
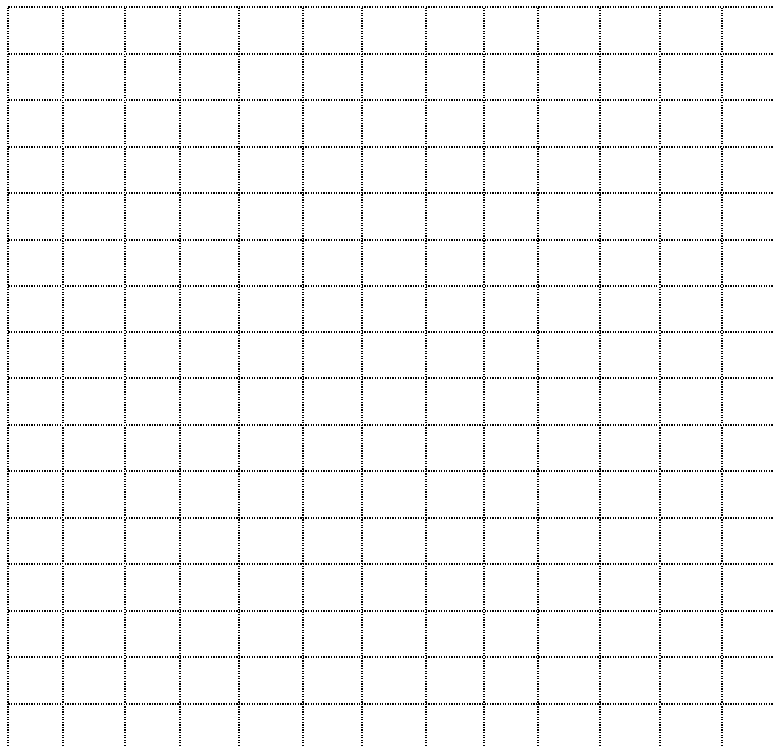
(b) (10pts) What is the equilibrium price range for widgets?

(c) (5pts) What is the equilibrium quantity of widgets?

(d) (5pts) What is the total consumer surplus in equilibrium? Your answer should be in terms of a dollar amount.

(e) (5pts) What is the total producer surplus in equilibrium? Your answer should be in terms of a dollar amount.

Suppose that to help sellers of widgets, the government imposes a price floor in the market for widgets. No one may now trade a widget for less than $9.50. Suppose further that with the price floor in place, only the five trades described in the following table occur.

Seller's ID	Buyer's ID	Price	Seller's producer surplus	Buyer's consumer surplus
A	1	$9.50		
D	3	$9.50		
C	4	$9.50		
F	6	$9.50		
G	9	$9.50		

(f) (10pts) Fill in the table to show the actual producer surplus and consumer surplus associated with each trade.

(g) (5pts) Why do only five widgets sell when the $9.50 price floor is in place?

(h) (10pts) Did the price floor help sellers? Thoroughly explain.

(i) (10pts) Considering that society in general is composed of buyers and sellers, how did the price floor affect society in general? Thoroughly explain.