ECON 180 - Regulation & Antitrust Policy
Drake University, Spring 2013
William M. Boal

Signature: _____

Printed name: _____

QUIZ 3 VERSION A
"Welfare Analysis"

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Mobile phones or other wireless devices are NOT permitted. Points will be subtracted for illegible writing or incorrect rounding. Point values for each question are noted in brackets.

I. Multiple choice: Circle the one best answer to each question. [2 pts each: 18 pts total]

(1) Brandon is willing to pay $600 for an iPad, but fortunately the price is only $400. If he buys an iPad, his consumer surplus is
a. zero.
b. $200.
c. $400.
d. $600.
e. $1000.

(2) Suppose consumers now buy 10 million gallons of ice cream at a price of $5 per gallon. If the price of ice cream falls to $3 per gallon, and nothing else affecting demand changes, the increase in consumer surplus is
a. exactly $20 million.
b. less than $20 million.
c. more than $20 million.
d. Cannot be determined from information given.

(3) The height of the supply curve equals
a. marginal cost of producing that unit.
b. producer surplus on that unit.
c. consumer surplus on that unit.
d. consumers' willingness to pay for that unit.

(4) In a perfectly competitive market, consumer surplus
a. is less than producer surplus.
b. exactly equals producer surplus.
c. is greater than producer surplus.
d. Cannot be determined from information given.

(5) Suppose a change in the economy increases the welfare of government employees by $3 billion but decreases the welfare of taxpayers by $4 billion. Such a change would be called a
a. Pareto improvement.
b. a potential Pareto improvement, or an economically efficient change.
c. both of the above.
d. none of the above.

(6) To pass the compensation test of Kaldor and Hicks, a change in the economy must result in
a. winners but no losers.
b. gains to winners that exceed any losses to losers.
c. at least some winners.
d. cost savings for the government.
e. a rise in wages, salaries, and other compensation.

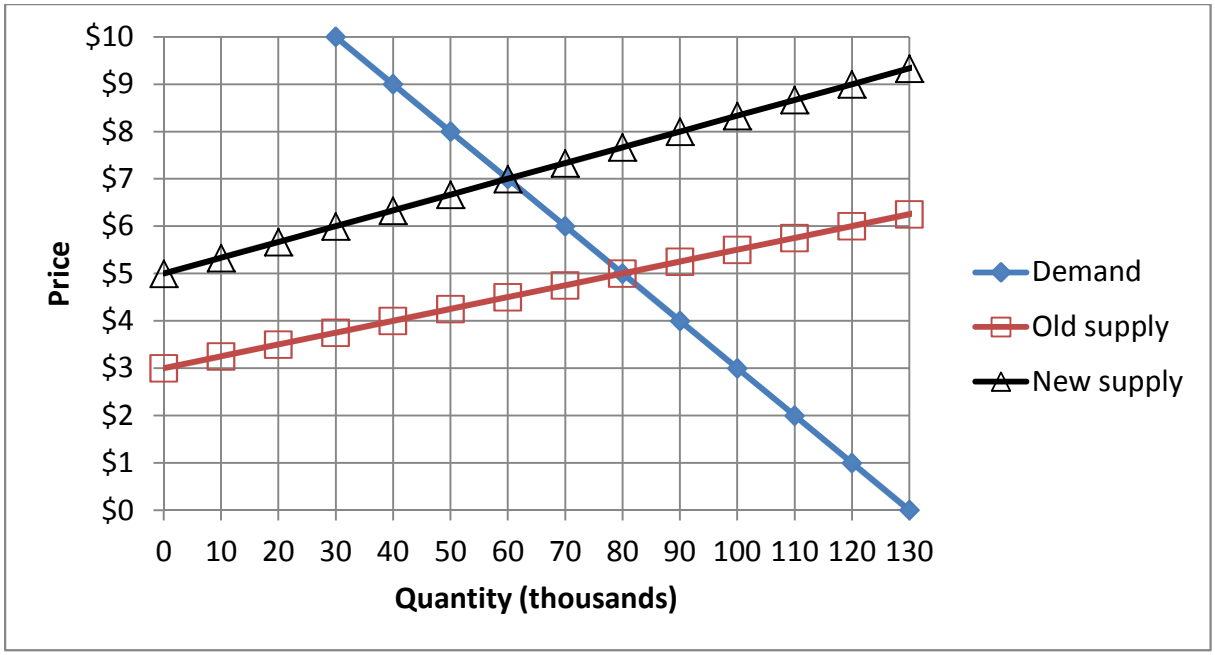
(7) Suppose the market demand elasticity for computers is -3 and Firm X has market share of 5% (or 0.05). Then, assuming other firms do not change their market quantity, Firm X perceives an elasticity of demand for its output equal to
a. -0.05 .
b. -0.15 .
c. -3.
d. -5.
e. -15.
f. -60.

(8) Suppose for some reason that the quantity traded in a market for petroleum is 35 million, but the market is not in equilibrium. Rather, at this quantity, the height of the supply curve is $90 and the height of the demand curve is $120. Then producing one more unit of petroleum would
a. increase social welfare by $30.
b. decrease social welfare by $90.
c. increase social welfare by $120.
d. decrease social welfare by $210.
e. Cannot be determined without knowing the equilibrium price.

(9) A quota on *selling* ivory would cause the price of ivory to
a. rise.
b. fall.
c. rise or fall, depending on the shapes of the demand and supply curves.
d. remain constant.

II. Problems: Insert your answer to each question below in the box provided. Feel free to use the margins for scratch work—only the answers in the boxes will be graded. Work carefully—partial credit is not normally given for questions in this section.

(1) [Welfare effects of shifts in curves: 27 pts] The following graph shows the market for papayas. Initially the supply curve was at the position shown as "Old Supply." Then government environmental regulations raised the cost of growing papayas and the supply curve shifted to "New Supply."



Consider the market *before* the supply shift.

a. How much are consumers willing to pay for the 50 thousandth papaya? $

b. How much consumer surplus do they enjoy for the 50 thousandth papaya? $

c. What is the marginal cost to producers of the 40 thousandth papaya? $

d. How much producer surplus do they enjoy for the 40 thousandth papaya? $

Now consider the effects of the supply shift.

e. Did consumer surplus *increase, decrease*, or *remain constant* as a result of the shift in supply?

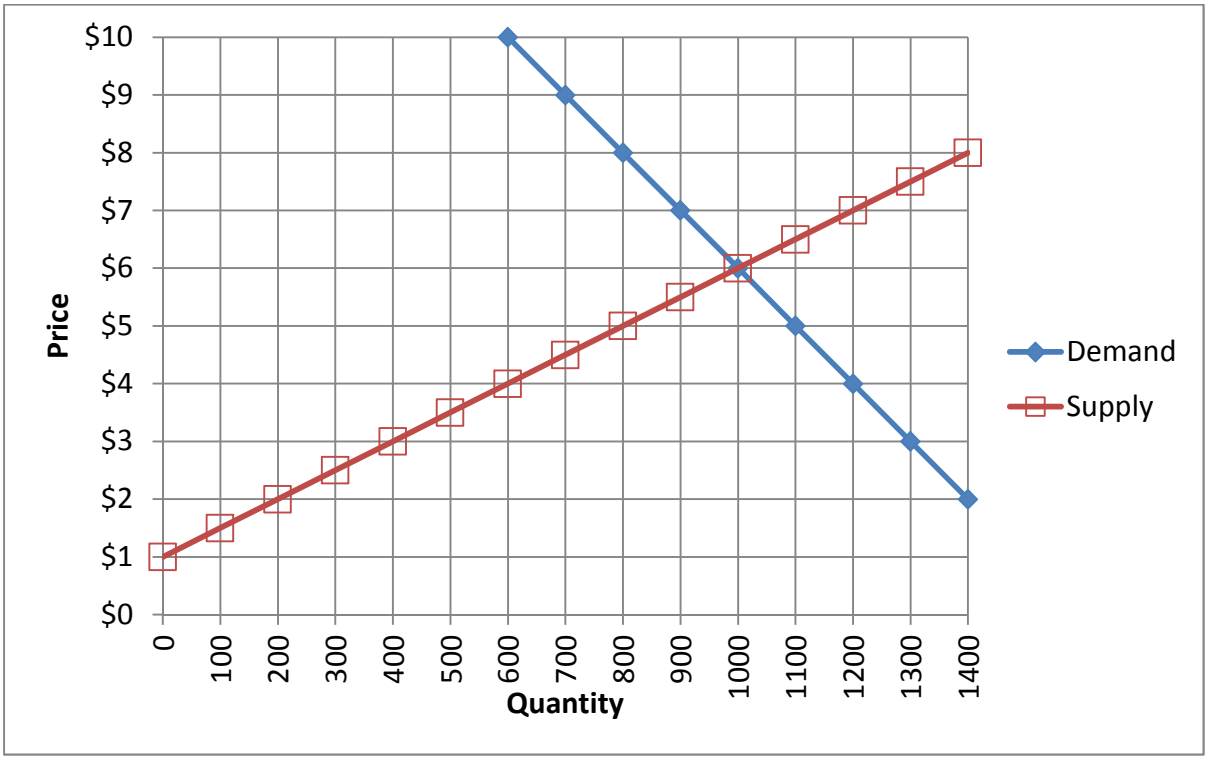
f. Compute the change in consumer surplus. $ thousand

g. Did producer surplus *increase, decrease*, or *remain constant* as a result of the shift in supply?

h. Compute the change in producer surplus. $ thousand

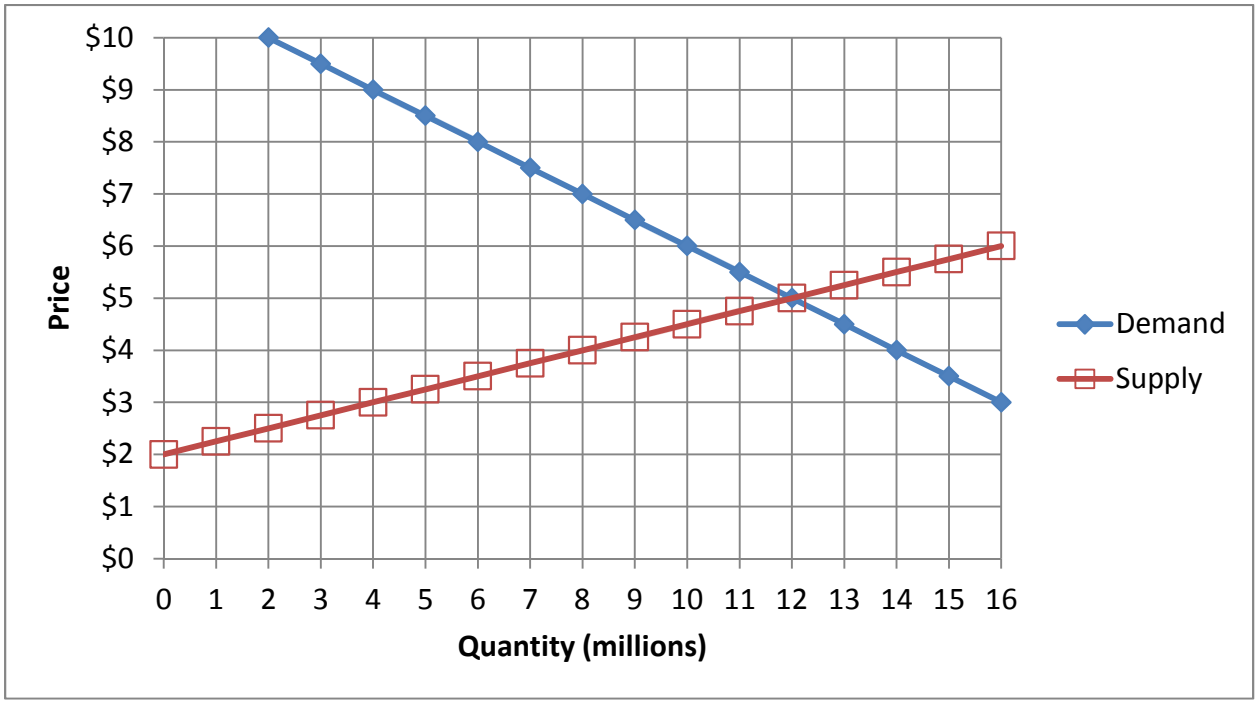
i. Who was harmed more by the regulations—consumers or producers?

(2) [Welfare effects of price controls: 27 pts] The following graph shows the market for pasta sauce. Suppose the government decides the price of pasta sauce is too low, and it imposes a price floor (or minimum legal price) of **$ 8**.



a. Does the price floor create *excess demand*, *excess supply*, or *neither*?	
b. How much (give a number)?	
c. Give the quantity actually traded with the price floor.	
d. Does consumer surplus *increase, decrease,* or remain *constant* as a result of the price floor?	
e. Compute the change in consumer surplus caused by the price floor.	$
f. Does producer surplus *increase, decrease,* or remain *constant* as a result of the price floor? (Assume optimistically that only the lowest-cost producers manage to sell pasta sauce with the price floor.)	
g. Compute the change in producer surplus caused by the price floor.	$
h. Does social welfare *increase, decrease,* or remain *constant* as a result of the price floor?	
i. Compute the deadweight social loss caused by the price floor.	$

(3) [Welfare effects of quotas: 24 pts] The following graph shows the market for a particular chemical. The government has decided to restrict use of the chemical due to environmental concerns. The government will impose a quota on sellers: only **8** million units of the chemical may be sold. Assume that permits to sell **8** million units will be given only to the lowest-cost sellers (on the low end of the supply curve).



a. What was the market price of the chemical before the quota is imposed?	$
b. What is the market price of the chemical after the quota is imposed on sellers?	$
c. Does consumer surplus *increase, decrease,* or remain *constant* as a result of the quota?	
d. Compute the change in consumer surplus caused by the quota.	$ million
e. Does producer surplus *increase, decrease,* or remain *constant* as a result of the quota? (Assume that permits to sell **8** million units will be given only to the lowest-cost sellers.)	
f. Compute the change in producer surplus caused by the quota.	$ million
g. Does social welfare *increase, decrease,* or remain *constant* as a result of the quota? (Ignore any environmental effects of the chemical.)	
h. Compute the deadweight social loss caused by the quota.	$ million

III. Critical thinking [4 pts]

Suppose consumers buy 70 million gallons of gasoline when the price is $4, and 90 million gallons when the price is $2.50. Estimate the benefit to consumers from the price decrease, using the concept of consumer surplus. Draw a graph, show your work and circle your final answer.

[end of quiz]