

Econ 001: Midterm 1- Stein
October 6th, 2011

Instructions:

- **This is a 60-minute examination.**
- **Write all answers in the blue books provided. Show all work. Use diagrams where appropriate and label all diagrams carefully.**
- **Write your name and your Recitation Instructor's name in every blue book that you use.**
- **This exam is given under the rules of Penn's Honor system.**
- **All blue books, blank or filled, must be handed in at the end of this exam. No blue books may be taken from the room.**
- **No calculators allowed!**

The Midterm has 2 parts. Part 1 consists of 7 multiple-choice questions. Part 2 consists of 2 short-answer questions.

You need 2 blue books. You are required to use the two blue books as follows:

- **BOOK 1:** write your answers to the **7 multiple-choice questions** on the first page and then write your answers to the **first short-answer question** in the remainder of the book.
- **BOOK 2:** write your answers to the **second short-answer question**.

Part I: Multiple Choice Questions (5 points each/35 points total):

1. In a recent article in the New York times, Mark Bittman compares the cost of a McDonalds meal for four (\$28) to the cost of a home cooked chicken dinner (\$13.78). An economist would likely claim that the true cost of the home cooked meal is _____ than \$13.78, as we need to add to the cost of groceries also the opportunity cost of _____.
 - a. Higher. Prepetition and cooking time.
 - b. Lower, Prepetition and cooking time.
 - c. Higher. Benefits of health home cooking.
 - d. An economist would have no idea how you cook a chicken anyway.

2. The following table shows the productivity of Antonia and Elena on sandwiches. Each of them works at most 8 hours a day. Using the following information, which of the statements below is correct?

	Cheese Steak (units per hour)	BLT (units per hour)
Antonia	1	1
Elena	2	1

- I. Antonia has a comparative advantage for BLT
 - II. They are willing to trade with each other if the price of BLT (in terms of CheeseSteak) is 3 Cheesesteaks.
 - III. They are willing to trade with the outside world at a price 1 Cheese Steak=2 BLT
- a. Only I
 - b. I and II
 - c. I and III
 - d. II and III
 - e. All three statements are correct.

3. An analyst believed that after the financial crisis in 2008, we have had a huge excess supply in the U.S. housing market and he predicted that, in the next 5 years, the housing market will approach a new equilibrium through price adjustment. According to his prediction, what might be observed in the next 5 years?

- a. A decrease in demand.
- b. An increase in quantity demanded.
- c. A decrease in quantity demanded.
- d. An increase in demand.

4. If Penn Dining decreases the price of their freshmen dining plans and notices an increase in total revenue, then we can say that, demand for dining plans was:

- a. Elastic
- b. Inelastic
- c. Unit elastic
- d. Inferior

5. The demand for a particular brand of tooth paste will likely be
- more elastic than the demand for tooth paste in general, because tooth paste is a necessity.
 - less elastic than the demand for tooth paste in general, because tooth paste is a necessity.
 - more elastic than the demand for tooth paste in general, because a particular brand has close substitutes.
 - less elastic than the demand for tooth paste in general, because a particular brand has close substitutes.
6. Economists know that a particular good can be classified as an inferior good if a(n) _____ in buyers' income causes a(n) _____.
- increase; increase in demand.
 - increase; decrease in quantity demanded, but not in the demand.
 - increase; decrease in demand.
 - decrease; decrease in demand.
7. Suppose that demand is completely elastic and supply is upward sloping. In this case, a per unit tax will:
- decrease consumer surplus
 - decrease produce surplus
 - be efficient
 - all of the above.

Part I: Multiple Choice Questions (5 points each/35 points total):

- A
- C
- B
- A
- C
- C
- B

Part II: Short Answer Questions (65 points total):

Explain answers carefully using graphs where appropriate. Your grade depends on your explanation as well as your answer: so show your work!

Keep your answers short! You only need a sentence or two per section.

Q1. (33 points). Please write your answer in bluebook #1.

In Munich, Germany there is an annual 10-day celebration called Oktoberfest. There are three workers who produce pretzels and cider as follows:

	Pretzels (units per day)	Cider (units per day)
Kyle	20	10
Jake	40	40
Dan	30	60

- Draw the combined daily PPF for these three workers with cider on the horizontal axis.
- Suppose that together they are producing 10 pretzels efficiently, how much cider will they be producing? Show this point on your PPF and label it X. What will each person be producing at point X? Be precise.
- Kyle threatens to quit working because he does not think that he is making the best use of his time at point X. He believes making more pretzels and less cider would be better. In what sense could it be better to make more pretzels and less cider?
- The price of cider in Germany is $\frac{1}{2}$ pretzel and the group may trade with other workers at this price. Dan is pleased by this trade and says “Now we can have more pretzels than before without reducing our consumption of cider”. Is he correct? **Explain graphically and numerically.**

Answer Key:

a. Three person PPF with cider on horizontal axis. Key points at (0,90), (60,60), (100,20), (110,0).

Points: 6

General shape;2 Each point:1

b. Answer:

Answer: Producing 105 units of cider, so $X = (105,10)$. Dan produces 60 units of cider (he has the lowest opportunity cost of producing cider), Jake produces 40 units of cider (he has the next lowest opportunity cost of producing cider), Kyle produces 5 units of cider and the 10 units of pretzels.

Points: 12

Q Cider=105: 2

Correct on PPF: 2

Dan 60 units of cider:2; Jake: 40 cider:2; Kyle: 5 cider & 10 pretzels: 2 each

c. Points: 5

Allocative efficiency. While point X is productively efficient, if the marginal benefit of cider in terms of pretzels is less than 2 pretzels, then they would be better off having Kyle produce more pretzels.

In detail: We know Kyle wants MORE pretzels and LESS cider.

For allocative efficiency we need $MB=MC$. As MB is diminishing the MORE of a good we have the LOWER is the MB. In terms of cider: we are told we currently have too much, so we must be willing to move along (left) the MB curve from a point where $MB(cider) < MC(cider)$ to a point where $MB(c)=MC(c)$

In terms of pretzels: we are producing too few, so we want to go from a point where the $MB(pretzels) > MC(pretzels)$ by moving down along the MB curve.

Points: Use of terminology as follows:

Not Allocatively Efficient:5; $MB < MC$:4; Preferences:3

d. Dan is correct.

Note that the trade line runs from (0, 90) to (180, 0) and is tangent to the joint PPF along the segment (0, 90) to (60, 60).

Graphically: consumption point on the CPF outside PPS at cider=105.

Numerical answer: If they still want 105 units of cider (as at point X) then they can get this by producing 90 units of pretzels and trading 52.5 units of pretzels for the 105 units of cider, leaving them with 37.5 units of pretzels compared with the 10 units they used to have.

Points: 10

Graphing correct CPF: 4 (1 if CPF intersects PPF, 2 if not correct slope)

Graphing correct consumption point: 3

Calculating that consumption of pretzels now $37.5=3$

Q2. (32 points). Please write your answer in bluebook #2.

Suppose that the market for vaccines is characterized by an upward sloping supply and downward sloping demand.

- a. Draw a typical Supply and Demand graph for this market and show the equilibrium price and quantity.

- b. At the equilibrium price some people do not purchase vaccines. Show these people on your graph.

- c. In order to encourage vaccinations the government wishes to make them more affordable. It thus places a price ceiling that is below the equilibrium price in this market. Will such a policy increase the number of people who are vaccinated? Explain using your graph.

- d. In order to encourage vaccinations the government wishes to make them more affordable. It thus decides to subsidize them by a set amount (s) per unit. Will such a policy increase the number of people who are vaccinated? Explain using your graph. Is this policy therefore efficient? Explain using your graph.

Answer Key:

a. Typical upward sloping supply and downward sloping demand.

Points: 4

Axis:2; P^* & Q^* : 1 each

b. The horizontal space from the eqbm quantity over to where the demand curve intersects the horizontal axis.

Also ok if mark the part of the demand curve where $MB < P^*$

Points: 4

c. Need to show price ciling below P^* . At this price there is excess demand as the quantity of vaccines supplied falls (show where supply curve intersects the price ceiling) and the quantity demanded increases. As the short side of the market determines the quantity traded so this policy will actually decrease the number of people who are vaccinated.

Points:8

Mark price ceiling:2; Q_s & Q_d : 2 each

Understanding that the quantity exchanged is the lesser of the two: 2

Note: a student who marks a price ceiling but does not understand the impact: 3 points max

d. Describe this as either supply shifts out or demand shifts out. Either way the number of people vaccinated increases. In the context of this problem (in which no issue of externalities is raised) the subsidies create DWL from over production and thus do not lead to an efficient outcome. Need to show graphically DWL or that at Q_1 $MC > MB$.

Points: 16

General understanding of subsidy graph: 4 points

New equilibrium quantity: 4 points

Greater than Q^* : 2 points

DWL or $MC > MB$ market clearly on the graph: 4 points for correct area

Thus inefficient: 2 points

Note: students will get the 2 points for explanation even if not correctly marked on the graph. These students can get a max of 12 points on this part.

Attention: we assumed that parts c & d are separate. Students who added the subsidy to an existing price ceiling answered a very nice question though somewhat more difficult question. They will get full credit as long their analysis is consistent with their graph.