ECON 201 Yoto Yotov
Principles of Microeconomics **Fall 2017**

Problem Set #1

*This Problem Set is due in class on **Tuesday, October 24**. Please bring a hard copy of your work. No late Homeworks will be accepted!*

#1. Use the following table representing the production possibilities for a country to answer questions a) to c)

Capital Goods	Consumer Goods	Point
5	0	A
4	5	B
3	9	C
2	12	D
1	14	E
0	15	F

a) Draw the PPF for the country. Remember to label all elements on your graph.

b) In terms of growth, production at point C will tend to generate more/less/equal growth as compared to point D. Why?

c) Characterize an output combination of 3 units of capital goods and 4 units of consumer goods in terms of employment of resources and efficiency. Show the point representing this combination on your graph, and label it G.

d) Given the state of technology, is it possible for this economy to achieve production combination of 2 units of capital goods and 16 units of consumer goods? If not, what can be done in order achieve this production combination in the future? Show this point on your graphs and label it H.

e) What is the opportunity cost of the tenth unit of consumer goods in terms of capital goods if the economy is producing at point C.

#2. Using the PPF concept, compare a ***frontier society,*** which is one that lives from hand to mouth and produces relatively more ***private goods*** (*A good is defined as `private' consumers could be denied access to its benefits*), with an ***urban society***, which is more advanced and produces relatively more ***public goods*** (*A good is called `public' if its benefits are indivisibly spread among the entire society, regardless of whether a particular individual wants to consume it or not.).*

a) Use the same graph to draw the PPFs of the two countries if you know that the nations are initially identical in terms of resources. Label the PPF for the Frontier Society PPF_f and for the Urban society PPF_u.

b) On your picture from part a) show the production and consumption combinations for each country. Keep in mind that that both countries will produce and consume both types of goods, but the frontier society will produce relatively more private goods. Label the production and consumption combination for the frontier society F and the corresponding point for the urban society U.

c) Public goods lead to more growth. Draw a new graph representing the difference in the production possibilities between the two societies in the future.

#3. ***Market failure and Government Intervention.*** The following three are examples of Market Failure:

Collusion among several big companies in an industry so that they can control market prices

Loud night club in a quiet neighborhood;

Homeless people in the streets.

For each of the cases answer the following questions:

a) What is the Market failure in terms of the five conditions defined in class (e.g. consumers fail to be rational, or the market fails in providing just and fair distribution, etc.)?

b) What measures could the government take in order to correct for the Market failure?

#4. ***Supply and Demand Shifts.*** Assume that corn is a key ingredient in the food for cows, and beef is a substitute for pork. Use supply and demand analysis to trace the effects of a a drought in the Great Plains , where corn is produced, on:

a) The corn market;

b) The beef market;

c) The pork market.

For each of the three cases: 1. Remember to label your figure(what market is that?), each axis, as well as the curves and all the relevant points such as the equilibrium quantity, Q_0, the equilibrium price, P_0, and the initial market equilibrium, E. 2. Show the shift in the appropriate curve(s) and indicate the new equilibrium quantity, Q_1, the new equilibrium price, P_1, and the new equilibrium, E'. 3. In each case, provide a brief explanation. 4. Clearly state the effect on the Market-clearing price and the Equilibrium quantity.

#5. ***Market equilibrium.*** The following table represents the schedules of demand and supply for bicycles in an economy:

	Price	Quantity Demanded	Quantity Supplied	State of the Market
A.	140	20	60	Surplus of 40
B.	120	30	50	
C.	100	40	40	
D.	80	50	30	
E.	60	60	20	
F.	40	70	10	

a) Which point in this schedule represents the Market Equilibrium? What are the Equilibrium (market-clearing) Price and the Equilibrium Quantity?

b) Use the given data to plot the Supply and Demand curves on the same graph. Make sure that you label your graph and provide exact numbers for the equilibrium price and quantity.

c) Fill in the last column of the table, which represents the State of the Market (Example is given for point A.)

d) Suppose that due to the invention of a new econocycle, the demand for bicycles decreases three times. That is, at each price the demand for bicycles will be three times smaller. Plot the new demand on the same graph and find the new equilibrium price and quantity.

e) Suppose that instead of using table format, I had given you the supply schedule for bicycles as P= 20 + 2Q and the demand schedule for bicycles as P= 180 - 2Q (these two equations represent exactly the demand and supply schedules as given in the table. You cancheck by using the corresponding numbers from the table to substitute in each eqaution). Can you find the Equilibrium Price and Equilibrium Quantity? What are they?

#6. ***Elasticity of Demand.*** The following table represents the schedule of demand for DVDs in your community:

Price($)	Quantity Demanded	E_d	Total Expenditure
6	350		
5	450		
4	550		
3	650		
2	750		

a) Column 3 shows the Elasticity of Demand for DVDs. Fill the column by calculating the elasticity coefficient for each price change.

b) Now, fill column 4 by calculating the Total Expenditure on DVDs in the community, which is the same as the total revenue of the firms offering DVDs.

c) Look at column 3 and column 4. Are your numbers consistent with the rule

that a price decrease will increase total expenditure(revenue) only when demand is Elastic?

d) Suppose that because of a fall in the price of DVD players the demand for DVDs is twice as big as before (at any price). Use the new demand schedule and find the Elasticity of demand for a price change from $6 to $5. Is it the same as before? Why?

e) Suppose now that instead of doubling, the demand for DVDs has increased by 200 at any given price (add 200 to Q at each price). Use the new demand schedule and find the Elasticity of demand for a price change from $6 to $5. Is it the same as before? Why?

#7 This question is optional. Putting it all together.

a) In one paragraph, describe a product that is important and specific to your country, state or region. If possible, choose a product for which you expect that your classmates will not know much about. Use this opportunity to teach all of us something new and interesting about your country/state/region.

b) Do you think that the demand for this product is elastic or inelastic? Why?

c) What is the current price of this product? In US dollars? In local currency? Have there been any significant fluctuations in this price in recent years? List one factor that may affect the demand and one factor that may affect the supply for the product that you described in Part (a).

d) Use "Supply and Demand" graphical analysis to capture the effect on the equilibrium price and on the equilibrium quantity of the product from Part (a) due a change in supply caused by the factor that you described in Part (c). Make sure that your graph reflects your statement about the elasticity of demand from Part (b).

e) Given your statement about the elasticity of demand from part (b), will the revenues for the firms selling this product increase or increase in response to the price change that you found in part (d)? Explain.

f) List the closest equivalent (*Substitute*) to the product that you described in Part (a). Can you think of an example for a product that is considered a consumer *Complement* to the product that you described?