Economics 101
Spring 2017
Homework #2
Due Thursday, February 23, 2017

Directions:
- **The homework will be collected in a box before the large lecture.**
- Please place <u>your name</u>, <u>TA name</u> and <u>section number</u> on top of the homework (legibly). Make sure you write your name as it appears on your ID so that you can receive the correct grade.
- Late homework will not be accepted so make plans ahead of time. **Please show your work.** Good luck!

Please realize that you are essentially creating "your brand" when you submit this homework. Do you want your homework to convey that you are competent, careful, and professional? Or, do you want to convey the image that you are careless, sloppy, and less than professional. For the rest of your life you will be creating your brand: please think about what you are saying about yourself when you do any work for someone else!

Part I: Opportunity Cost, Production Possibility Frontier, Comparative Advantage, Absolute Advantage

1. Consider two fictional countries, Florin and Guilder, who both produce smart phones and wristwatches. It takes Florin 4 hours to produce 100 smart phones and 6 hours to produce 100 wristwatches. It takes Guilder 3 hours to produce 100 smart phones and 3 hours to produce 100 wristwatches. Labor laws differ between the two countries; workers in Florin can work 12 hours per day and workers in Guilder can work 9 hours per day. Florin and Guilder do not trade goods with each other due to a long-standing disagreement between the leaders of the two countries.

    a. Given the above information, draw the Production Possibility Frontier (PPF) per day graph for both Florin and Guilder, with smart phones on the X-axis and wristwatches on the Y-axis.

    b. What is the opportunity cost of producing an additional 100 smart phones for Florin? What is the opportunity cost of producing an additional 100 smart phones for Guilder?

    c. Given the above information, who has the absolute advantage in the production of smart phones? Who has the absolute advantage in the production of wristwatches?

    d. Which country has the comparative advantage in the production of smart phones? Which country has the comparative advantage in the production of wristwatches?

    e. Through careful diplomacy, the countries decide to open their borders to trade. Draw the Joint PPF graph, representing the joint production possibility frontier for both Florin and Guilder, with smart phones on the X-axis and wristwatches on the Y-axis. Label the coordinates of any kink points. How much of each good is each country producing at the kink point?

    f. Write down the slope-intercept form of the Joint PPF.

    g. Consider the point (400,200) on the Joint PPF. How many smart phones and how many wristwatches is Florin producing at this point? How many smart phones and how many wristwatches is Guilder producing?

    h. What is the acceptable range of trading prices for 100 wristwatches in terms of smart phones for the two countries to trade with each other?

    i. If Florin and Guilder do not trade with one another, is it possible for Florin to produce 150 smart phones and 100 wristwatches while Guilder produces 150 smart phones and 200 wristwatches? If the two countries trade with one another, is it possible for each country to produce this combination of smart phones and wristwatches?

Part II: Demand and Supply Shifts

2. Analyze the following scenarios and determine the following: (i). is there an effect on demand, supply, or both, (ii.) does this information cause a movement along the demand or supply curve, or does it cause a shift, and (iii) assuming each market is initially in equilibrium, what is the effect on the equilibrium price and quantity with this change?

    a. Consider the market for taxicabs in Los Angeles. Suppose the government imposes a ban on private downtown parking.

    b. A recently published study indicates that drinking more than three cups of coffee a day causes cancer. Consider the market for coffee. Then consider the market for tea.

    c. Samsung has improved the speed at which they can create a Galaxy smart phone in their factory. Consider the market for Galaxy phones.

    d. The price of stainless steel falls due to a technology advancement. Consider the market for stainless steel surgical equipment.

    e. Consider the market for self-driving cars. Suppose that a recent crash of a self-driving car causes consumers to be suspicious about the quality of the technology in the car. Suppose at the same time, the cost to produce a self-driving car increases.

    f. Consider the market for iPads. The price of a competitor tablet, the Kindle, increases. At the same time, wages increase for employees working at iPad factories.

Part III: Market Summation

3. The Johnson family consists of 8 people. Each person has their own preferences about how many ice cream pints to buy. Assume that each individual's demand curve is linear. The individual demand information for ice cream pints is listed in the table below:

Price	Mom	Dad	Sister1	Sister2	Brother1	Brother2	Grandma	Grandpa	Aggregate
1	10	9	12	5	16	13	12	20	
2	8	6	11	4	12	11	9	15	
3	6	3	10	3	8	9	6	10	
4	4	0	9	2	4	7	3	5	
5	2	0	8	1	0	5	0	0	

    a. Fill in the Aggregate column in the table above.

    b. Draw the demand curves for each family member on eight separate graphs. Determine the equation for each of the eight demand curves. Write your equations in x-intercept form.

    c. The family has decided they want to create one family, or aggregate, demand curve to represent their willingness to pay for ice cream pints as a group. Graph the aggregate demand curve, clearly labeling any kink points. How many kink points are there in the aggregate demand graph? Why?

4. Now consider the supply side of the market. Suppose there are 5 perfectly competitive firms who sell ice cream to the Johnson family. The price and quantity supplied for each of the five firms are listed in the table below where price is the price per pint and the quantities are measured in pints:

Price	Ben&Jerry's	Haagen-Dazs	Edy's	Magnum	Cornetto	Aggregate Supply
4	2	2	4	6	4	
5	3	4	5	9	6	
6	4	6	6	12	8	
7	5	8	7	15	10	

   a. Fill in the Aggregate column in the table above.

   b. Draw the supply curves on a separate graph for each firm. There will be five graphs. Determine the equation for each of the five supply curves, and write your answer in x-intercept form.

   c. Derive the aggregate supply curve, by combining the five individual supply curves, and graph it in the same graph as the aggregate demand curve above. Label any kink points.

   d. What is the equilibrium price and quantity in the market for ice cream?

   e. (Challenging!) What is the consumer surplus? What is the producer surplus? What is the total surplus?

Part IV: Price Ceilings and Price Floors

5. The supply and demand equations for New York City apartment rentals are as follows (measured in $1,000):

$$\text{Supply of apartments: } P = 2Q_s + 2$$
$$\text{Demand for apartments: } P = 12 - 3Q_d$$

   a. Suppose the United States government imposes a price ceiling at $5. Is there a shortage or a surplus? Identify how big the shortage or surplus is given this price ceiling.

   b. Now suppose the government imposes a price ceiling at $8. Is there a shortage or surplus? Identify how big the shortage or surplus is given this price ceiling.

   c. If the government wants to impose a price intervention in this market that creates a surplus of 3 units, would they implement a price ceiling or a price floor? What implemented price control would create this surplus?

   d. Explain in words the difference between a price ceiling and a price floor. Give an example of both a price ceiling and price floor that exists in a market in the United States.

Part V: Agricultural Price Supports and Price Guarantees

6. Suppose the supply and demand for potatoes are given by the following equations where P is the price per ton of potatoes and Q is the number of tons of potatoes:

$$\text{Supply of potatoes: } Q_s = 1/3P - 6$$
$$\text{Demand for potatoes: } Q_D = 36 - (1/3)P$$

    a.   What are the equilibrium price and quantity for potatoes?

    b.   The government is concerned about the potato market and wants to implement a price support program, where the government sets the price at $72 and agrees to purchase any additional potatoes that are not sold. In addition, the government plans to store any potatoes they purchase and incur a storage cost of $1,000 for the warehouse rental. Given this program, how many potatoes do consumers buy? How many potatoes do farmers sell? How many potatoes are purchased by the government, and what is the cost to the government?

    c.   One government official remembers learning about agricultural price support and guarantee programs in their college economics course, and proposes that a price guarantee program would be a cheaper alternative to the program proposed in part (b). The government official wants to keep the price at $72 but instead offer a subsidy to the farmers. How many potatoes do the farmers sell with this program? What is the price to the consumers with this program? What is the cost of this program to the government?

    d.   Is the government official correct? What program does the government prefer?

    e.   What program do the consumers prefer? What program do the farmers prefer?

Part VI: Thought Experiment on Time Management

After Professor Kelly's discussion in lecture regarding weekly time management, you are curious to understand where all of your time goes and how you can find more time to study for your economics class. You realize that resources are scarce, you only have 168 hours in a week, and you want to optimize your life by getting more study time, more social time, and enough time to sleep each week.

Instructions: For Homework 2, fill in the second column below with your weekly expected number of hours for each activity. Add activities to the table for items not listed: the list is not complete....for example, there is no exercise item on the activity list-so feel free to amend/change the list to more closely reflect the activities where you spend your time. Then, each day of the following week, record the amount of time you actually spend on each activity. Finally, record the difference between expectations and reality once the week is over. Note: you do not need to turn in this table, this is meant as an aid to help you track information.

In Homework 3, you will see a question asking about your reflections on this assignment. How can you better manage your time each week? What activities are "time-wasting", that you can devote less time towards in order to be a more productive student?

Activity	Weekly Expectation	Actual: Day 1	Actual: Day 2	Actual: Day 3	Actual: Day 4	Actual: Day 5	Actual: Day 6	Actual: Day 7	Difference: Actual - Expectation
Sleep									
School credits									
Study time									
Eating meals									
Transportation									
Social Time									
Time on social media, non school related websites									
Working at a job									
Student Orgs									
Religious Activities									
Total	**168 hrs**	**24 hrs**	**24 hrs**	**24 hrs**	**24 hrs**	**24 hrs**	**24 hrs**	**24 hrs**	**0**