**Economics 102**

**Summer 2013**

**Homework #2**

**Due July 2, 2013**

**Directions:** The homework will be collected in a box **before** the lecture. Please place your name, TA name and section number 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. Please remember the section number for the section **you are registered,** because you will need that number when you submit exams and homework. Late homework will not be accepted so make plans ahead of time. **Please show your work.** Good luck!

Please remember to

* Staple your homework before submitting it.
* Do work that is at a professional level: you are creating your “brand” when you submit this homework!
* Not submit messy, illegible, sloppy work.

1. This set of questions is meant as a review of supply and demand shifts. For each question assume the market is initially in equilibrium.

a. Consider the market for bicycles. Suppose that the price of gasoline doubles due to the imposition of higher excise taxes on gasoline consumption. What do you predict will happen to the equilibrium price and quantity in the market for bicycles? Explain your answer.

b. Consider the market for bicycles. Suppose that the price of gasoline doubles due to the imposition of higher excise taxes on gasoline consumption. At the same time the cost of labor used to construct bicycles increases. What do you predict will happen to the equilibrium price and quantity in the market for bicycles? Explain your answer.

c. Consider the market for soft drinks. Suppose that the country enacts legislation banning the use of corn syrup in these drinks and this causes suppliers of soft drinks to use a more expensive sweetener. What do you predict will happen to the equilibrium price and quantity in the market for soft drinks? Explain your answer.

d. Consider the market for soft drinks. Suppose that people’s income rise and the income elasticity of demand for soft drinks is a positive number. What do you predict will happen to the equilibrium price and quantity in the market for soft drinks? Explain your answer.

e. Consider the market for soft drinks. Suppose that people’s income rise and the income elasticity of demand for soft drinks is a negative number. In addition the country enacts legislation banning the use of corn syrup in these drinks and this causes suppliers of soft drinks to use a more expensive sweetener. What do you predict will happen to the equilibrium price and quantity in the market for soft drinks? Explain your answer.

f. Consider the market for tea bags. You are told that the price of coffee has increased. You also know that the cross price elasticity of demand between tea bags and coffee is a positive number. What do you predict will happen to the equilibrium price and quantity in the market for tea bags? Explain your answer.

2. Suppose the market for fruit juice in Xia, a small closed economy, is a competitive market with the following demand and supply curves:

Domestic Demand: P = 5 – (1/100)Q

Domestic Supply: P = (1/400)Q

where P is the price per quart of juice and Q is the quantity of fruit juice measured in quarts.

a. Given the above information, what is the equilibrium price and quantity in this market?

b. Given the above information, what is the value of consumer surplus (CS) and producer surplus (PS)?

Suppose that the government of Xia decides to open its fruit juice market to trade and the world price of fruit juice is $2 per quart.

c. Describe verbally the effect on Xia of this decision. Be specific and thorough in your description.

d. When Xia opens this market to trade and the world price of fruit juice is $2 per quart, what happens to the value of CS, the value of PS, the level of domestic consumption of fruit juice, and the level of imports or exports?

e. Given your answer in (d), would you conclude that trade is beneficial to Xia? Be specific in your answer and explain who benefits and who loses from this trade and what the overall impact is on this economy of opening this market to trade.

3. Suppose the small closed economy of Zipia has the following domestic demand and domestic supply curves for mangoes:

Domestic Demand: P = 100 – 4Q

Domestic Supply: P = 20 + Q

where P is the price per box of mangoes and Q is the number of boxes of mangoes. Furthermore, you know that the world price of mangoes is $24 per box.

a. If Zipia opens this market to trade, will Zipia import or export mangoes? Provide a numerical value of the level of imports or exports and explain in your answer why Zipia either imports or exports mangoes once this market is open to trade.

b. Suppose that Zipia opens this market to trade, but at the same time, imposes a quota in this market. The license holder revenue from this quota is equal to $40. Given this information, calculate the quota that has been imposed on this market. Show your work and the logic that lies behind your work. Actually when you do this find the two possible quota levels that could have been imposed in this market with the result that license holder revenue is equal to $40 due to the quota. After you do the work and show this work, fill in the following table with the two possible quotas that could be imposed:

Possible Solutions to this question:

|  |  |
| --- | --- |
| Quota 1 =  | Quota 2 =  |
| Price with Quota 1 =  | Price with Quota 2 =  |
| Quantity Demanded Domestically with Quota 1 =  | Quantity Demanded Domestically with Quota 2 =  |
| Quantity Supplied Domestically with Quota 1 =  | Quantity Supplied Domestically with Quota 2 =  |
| Level of imports with Quota 1 =  | Level of imports with Quota 2 =  |

c. Given the possible quotas imposed in (b), what is the value of the deadweight loss due to the imposition of these possible quotas? Are the deadweight loss amounts the same with either quota amount? Show your work and then record your DWL findings in the following table:

Possible Quotas:

|  |  |
| --- | --- |
| Quota 1 | Quota 2 |
| DWL with “Quota 1”= | DWL with “Quota 2” =  |

d. For one of the quotas (you choose which one you want to use) describe verbally why there are two areas of deadweight loss and the reason why each of these areas is a deadweight loss when the quota is imposed on the market.

4. Consider the market for mopeds in Tarenia, a small closed economy. Currently domestic demand and supply for mopeds in Tarenia can be described by the following equations:

Domestic Demand: P = 10,000 – 2Q

Domestic Supply: P = 2000 + 6Q

where P is the price per moped and Q is the quantity of mopeds. Furthermore, you are told that the world price per moped is $5000.

a. Find the equilibrium price, equilibrium quantity, consumer surplus, and producer surplus in the moped market in Tarenia. Assume this market is closed to trade.

b. Now, suppose that the government of Tarenia opens the moped market to trade. Find the price of mopeds in Tarenia once this decision is made. Then determine the number of Mopeds that will be purchased in Tarenia, the number of mopeds that will be produced domestically, the number of mopeds that will be exported, and the number of mopeds that will be imported. Determine the level of consumer surplus in the moped market in Tarenia once the market is open to trade. Determine the level of producer surplus in the moped market in Tarenia once the market is open to trade.

c. Suppose the government of Tarenia opens the moped market to trade. Furthermore, the government decides to implement a tariff that raises the price of mopeds in Tarenia by $1800 above the world price. Given this tariff, determine the tariff revenue the government of Tarenia will earn, the deadweight loss due to the tariff, the level of consumer surplus with the tariff, and the level of producer surplus with the tariff.

d. Given the choice of a closed market for mopeds, an open market for mopeds, of an open market with the described tariff in (c), which of these options will producers of mopeds in Tarenia prefer? Explain your answer and make sure you present convincing evidence to support your argument.

5. Suppose that there are three countries that trade with one another: Southland, Northland, and Eastland. The following equations represent the market demand curve for cotton in each of these three countries:

Market Demand for cotton in Southland: P = 100 – 2Q

Market Demand for cotton in Northland: P = 80 - Q

Market Demand for cotton in Eastland: Q = 50

where P is the price per unit of cotton and Q is the number of units of cotton. Furthermore you are given the following information about the production of cotton in these three countries:

Market Supply of cotton in Southland: P = Q

Market Supply of cotton in Northland: P = 20 + Q

Market Supply of cotton in Eastland: P = 20 + 2Q

Suppose there are no other countries that demand or supply cotton in this problem.

a. Given the above information, find the market demand curve for cotton if these three countries trade with one another.

b. Given the above information, find the market supply curve for cotton if these three countries trade with one another.

c. If these three countries produce cotton and trade with one another, what will the market equilibrium price and quantity of cotton be? Fill in the following table based on these countries trading with one another. [Hint: the numbers get a little messy, but you can do it!]

|  |  |  |  |
| --- | --- | --- | --- |
|  | Southland | Northland | Eastland |
| Quantity of Cotton Produced by each Country |  |  |  |
| Quantity of Cotton Demanded by each Country |  |  |  |
| Quantity of Cotton Exported by each Country |  |  |  |
| Quantity of Cotton Imported by each Country |  |  |  |

e. Look at your answers in the table: if you sum the exports and then sum the imports and compare the two numbers, are they the same? If not, you have an error and you need to go back through the problem to fix the error! In this example, the sum of exports must balance against the sum of imports.