

CARLETON UNIVERSITY
Department of Economics
ECON 1000 V – Introduction to Economics
2015 FALL

INSTRUCTOR: SULTAN AHMED

ASSIGNMENT 2: Covers Chapters 7-11. Topics: *Consumers, producers and the efficiency of the markets, the costs of taxation, applications of the theories of trade, externalities, and lastly, public goods and common resources.*

There are three sections: MCQs (section 1), Short free response questions (section 2) and longer free response questions (Section 3). TOTAL MARKS: 100

The deadline to submit the answers **online** (through cuLearn) is November 11, **midnight. This deadline will be strictly enforced.**

PLEASE NOTE THE FOLLOWING

Some of the students in this course could not submit the assignment 1 for a reason what appears to be associated with some technical issues. But I assume that you have learnt by this time how the system works. Please be very sure to adhere to the deadline and also know how to post your work on the cuLearn. If you are not sure about how to submit your work in one file and on the cuLearn, immediately seek help from the CCS or CUOL.

<http://carleton.ca/ccs/contact/>

Computing and communications services (CCS)

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CUOL Exam queries: cuoexams@carleton.ca

Graded material/convocation DVDs: student_centre@carleton.ca

One of my TAs observed the following: Would you take these comments/observations into consideration as you complete the assignment 2, please??

-Some students took pictures of their assignments (or graphs), however some pictures were blurry and hard to read. It would be great if you could mention to the students that they need to be sure the TA can read it.

- Would you also be able to remind people to put all their answers in 1 file (some people used a zip file, with several files in that folder).

- Would you also be able to ask people to put their name either in the title of the document or at the top of the document - this would avoid having a possible mix up

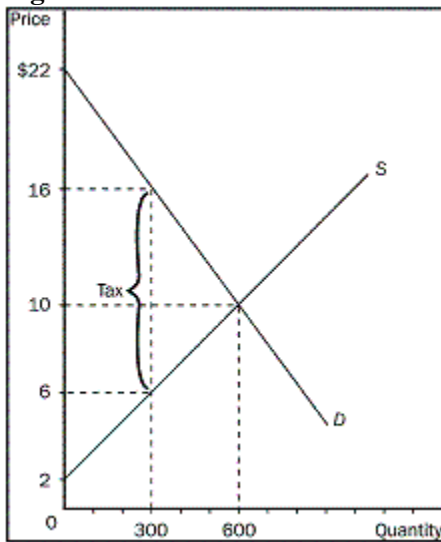
GOOD LUCK!

SECTION 1: Multiple Choice (20 marks). Answer all questions.

Identify the choice that best completes the statement or answers the question.

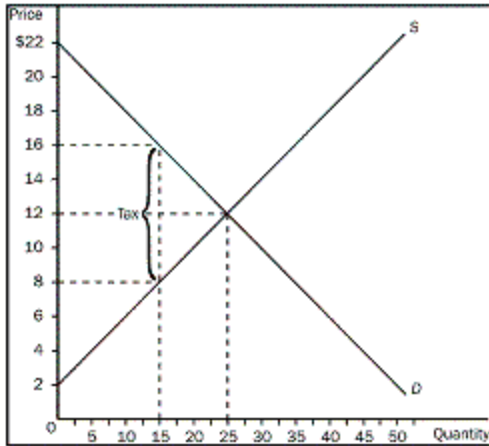
1. Amy buys a new dog for \$150. She receives consumer surplus of \$100 on her purchase. What is her willingness to pay?
 - a. \$50
 - b. \$100
 - c. \$150
 - d. \$250
2. Paris sells investment advice for \$100 per hour. Her cost is \$20 per hour. What is Paris' producer surplus?
 - a. \$20 per hour
 - b. \$80 per hour
 - c. \$100 per hour
 - d. \$120 per hour
3. When a tax is levied on a good, what is the effect on buyers and sellers, and who is worse off?
 - a. Buyers pay less, sellers receive less, and they are both worse off.
 - b. Buyers pay more, sellers receive more, and they are both worse off.
 - c. Buyers pay less, sellers receive more, and they are both worse off.
 - d. Buyers pay more, sellers receive less, and they are both worse off.

Figure 8-5



4. Refer to Figure 8-5. If the tax is imposed on the seller, what would consumer surplus be?
 - a. \$600
 - b. \$900
 - c. \$1500
 - d. \$2200

Figure 8-6



5. Refer to Figure 8-6. What would consumer surplus be after the tax is levied?
 - a. \$45
 - b. \$75
 - c. \$125
 - d. \$150

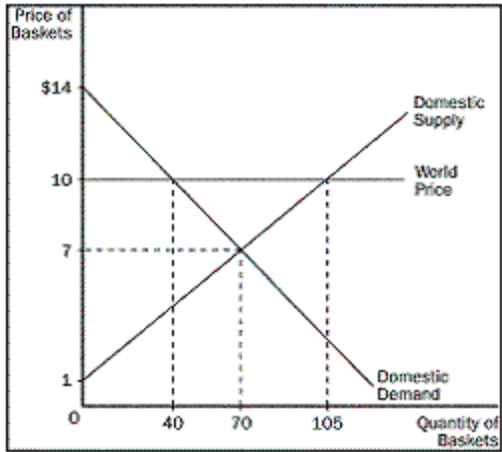
6. Suppose that policymakers are considering placing a tax on either of two markets. In Market A, the tax will have a significant effect on the price consumers pay, but it will not affect equilibrium quantity very much. In Market B, the same tax will have only a small effect on the price consumers pay, but it will have a large effect on the equilibrium quantity. In which market will the tax have a larger deadweight loss?
 - a. Market A because the demand of the market is relatively inelastic
 - b. Market B because the demand of the market is relatively elastic
 - c. Market A because the demand of the market is relatively elastic
 - d. Market B because the demand of the market is relatively inelastic

7. When a country is on the downward-sloping side of the Laffer curve, what will cutting tax rates do?
 - a. lower tax revenues and increase deadweight loss
 - b. lower both tax revenues and deadweight loss
 - c. increase tax revenues and decrease deadweight loss
 - d. increase both tax revenues and deadweight loss

8. Which of the following is one reason for the decline in the Canadian textile industry?
 - a. foreign competition
 - b. an increase in raw material prices
 - c. a decrease in Canadian demand for clothing
 - d. the enactment of the Canadian minimum wage law

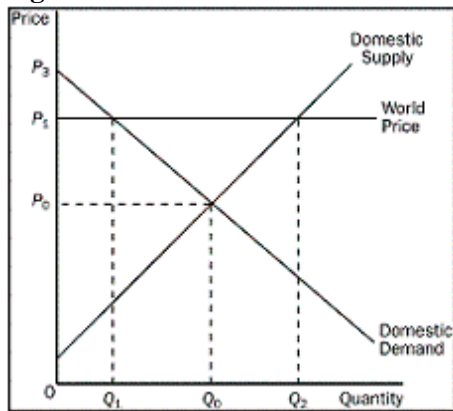
9. The world price of yo-yos is \$4.00 each. The pre-trade price of yo-yos in Taiwan is \$3.50 each. What would happen if Taiwan allows trade in yo-yos?
 - a. Taiwan will import yo-yos, and the price in Taiwan will be \$4.00 each.
 - b. Taiwan will import yo-yos, and the price in Taiwan will be \$3.50 each.
 - c. Taiwan will export yo-yos, and the price in Taiwan will be \$4.00 each.
 - d. Taiwan will export yo-yos, and the price in Taiwan will be \$3.50 each.

Figure 9-1



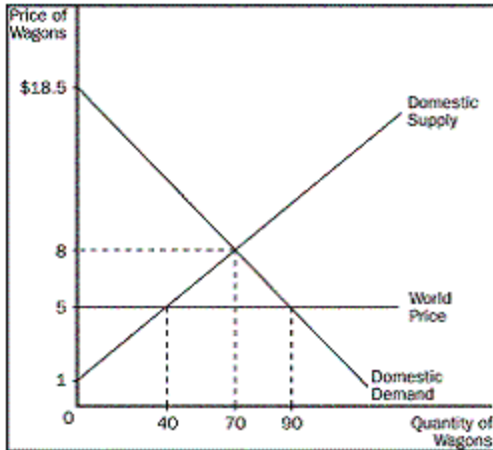
10. Refer to Figure 9-1. Without trade, what would consumer surplus be?
- \$210
 - \$245
 - \$420
 - \$455

Figure 9-3



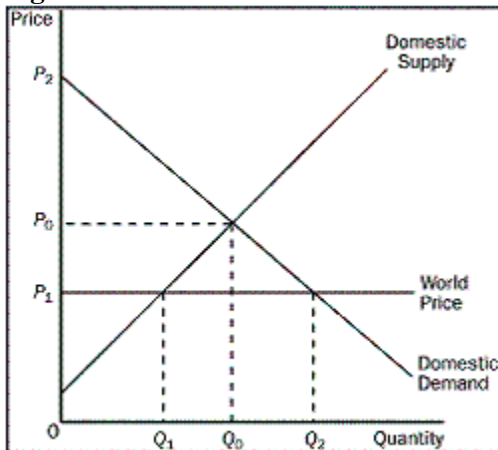
11. Figure 9-3 represents the domestic cheese market in Canada. What is the quantity of cheese exported from Canada?
- 0
 - $(Q_0 - Q_1)$
 - $(Q_2 - Q_0)$
 - $(Q_2 - Q_1)$

Figure 9-6



12. Refer to Figure 9-6. Without trade, what would total surplus be?
- \$122.50
 - \$245.00
 - \$306.25
 - \$612.50
13. Refer to Figure 9-6. With free trade, what would total surplus be?
- \$245.00
 - \$367.50
 - \$490.00
 - \$687.50

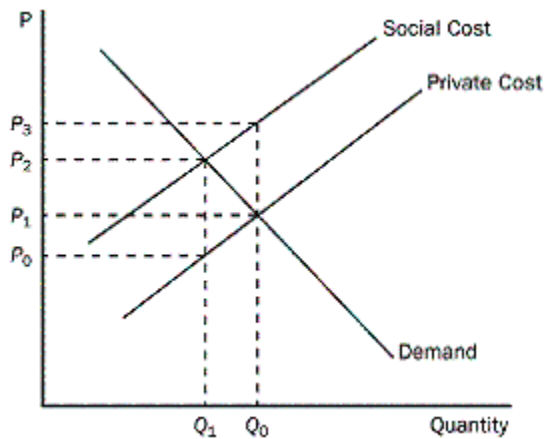
Figure 9-8



14. Figure 9-8 shows the domestic market for air conditioners in Kenya. What would be the price of air conditioners and the quantity demanded in Kenya after trade?
- P_0, Q_0
 - P_1, Q_0
 - P_1, Q_2
 - P_2, Q_2
15. The finance minister of a province that has many textile firms wants to impose tariffs on all imported textiles. Which of the following is NOT a likely consequence of such tariffs?

- a. Domestic textile buyers will lose consumer surplus, have less variety, and will pay higher prices.
 - b. Domestic textile sellers will gain producer surplus.
 - c. Domestic textile sellers will have a higher rate of technological advance.
 - d. Domestic textile sellers will have more market power.
16. How do we compare the multilateral approach with the unilateral approach?
- a. The multilateral approach has the potential to result in freer trade than does the unilateral approach.
 - b. The multilateral approach may have a political advantage over the unilateral approach.
 - c. The multilateral approach is simpler than the unilateral approach.
 - d. NAFTA uses the unilateral approach and GATT uses the multilateral approach to free trade.
17. Why are too few resources generally devoted to research in new technologies in developing countries?
- a. New technologies cannot be patented.
 - b. Government research grants are not easily obtainable.
 - c. Negative externalities are created from some research.
 - d. Inventors cannot capture the full benefits of their inventions.

Figure 10-3



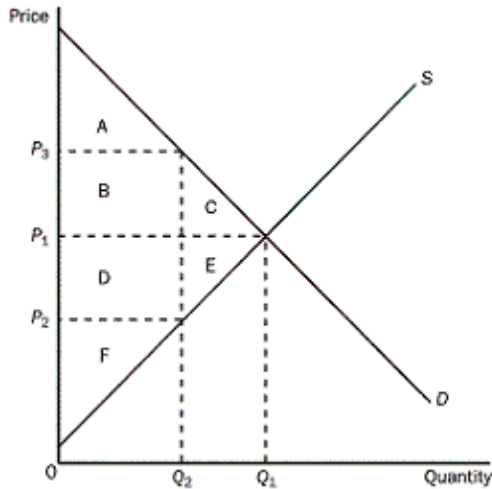
18. Refer to Figure 10-3. Which price and quantity combination represents the social optimum?
- a. P_0 and Q_1
 - b. P_1 and Q_2
 - c. P_2 and Q_1
 - d. P_2 and Q_2
19. What are corrective taxes enacted to do?
- a. raise revenue from those most able to pay
 - b. correct for the effects of negative externalities
 - c. discourage production of undesirable products
 - d. adjust markets with positive externalities
20. Which of the following would be considered a private good?
- a. national defense
 - b. a public beach
 - c. local cable television service
 - d. a bottle of natural mineral water

SECTION 2: SHORT FREE-RESPONSE QUESTIONS.

ANSWER ANY 5 QUESTIONS. EACH QUESTION CARRIES 8 MARKS. TOTAL MARKS: 40.

INSTRUCTIONS: Your answers to the following questions should take advantage of the relevant economic tools, principles and perspectives. Your answers must be precise.

1. (8 marks). Use the following graph shown to fill in the table that follows.



	Without Tax	With Tax	Change
Consumer surplus			
Producer surplus			
Tax revenue			
Total surplus			

2. (8 marks). Suppose that instead of a supply-demand diagram, you are given the following information:

$$Q^S = 100 + 3P$$

$$Q^D = 400 - 2P$$

From this information compute equilibrium price and quantity. Now suppose that a tax is placed on buyers so that

$$Q^D = 400 - (2P + T).$$

If $T = 15$, solve for the new equilibrium price and quantity. (Note: P is the price received by sellers and $P + T$ is the price paid by buyers.) Compare these answers for equilibrium price and quantity with your first answers. What does this show you?

3. (8 marks). Consider the following two statements: 1) “A tax that has no deadweight loss cannot raise any revenue for the government.” 2) “A tax that raises no revenue for the government cannot have any deadweight loss.” Which one is correct? Explain.

4a. (4 marks). To produce honey, beekeepers place hives of bees in the fields of farmers. As bees gather nectar, they pollinate the crops in the fields, increasing the yields of these fields at no additional cost to the farmer. What might be a reasonable private solution to this externality and how might the solution be reached?

4b. (4 marks). Imagine you are a nonsmoker sharing a house with a smoker. According to the Coase theorem, what determines whether your roommate smokes in the house? Is this outcome efficient? How do you and your roommate reach this solution?

5. (8 marks). Dick and Jane are neighbours; Dick owns a dog named Spot. Spot barks and disturbs Jane.

- a. Dick gets a \$500 benefit from the dog and Jane bears an \$800 cost from the dog’s barking. Can Dick and Jane reach a solution from private bargaining? Is this solution an efficient outcome?
- b. Dick gets \$1000 benefit from the dog and Jane bears an \$800 cost from the dog’s barking. Can Dick and Jane reach a solution from private bargaining? Is this solution an efficient outcome?
- c. If there are another 20 people who live on the same street as Dick and Jane and some of them also did not like Spot, will the solution reached in parts a and b change?

6. Given the table, place each of the following in the correct location in the table.

		Rival in consumption?	
		Yes	No
Excludable?	Yes	Private Goods	Club Goods
	No	Common Resources	Public Goods

- a. congested toll roads
- b. knowledge
- c. fish in the ocean
- d. national defence
- e. congested nontoll roads
- f. cable TV
- g. the environment
- h. fire protection

7a. (4 marks). The government often intervenes when private markets fail to provide an optimal level of certain goods and services. For example, the government imposes an excise tax on gasoline to account for the negative externality that drivers impose on one another. Why might the private market not reach the socially optimal level of traffic on the road without the help of government?

7b (4 marks). The citizens of Smalltown, Canada like seeing fireworks on Canada Day. Each of the town’s 1000 residents places a \$5 value on the experience. The cost of putting on a fireworks display is \$1000. Should there be a fireworks display? What is socially optimal? Would the private market result in a fireworks display?

SECTION 3: LONGER FREE RESPONSE QUESTIONS. TOTAL MARKS: 40

INSTRUCTION: Take a few minutes to plan and outline each answer. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include diagrams, if useful, in explaining your answers. All diagrams should be correctly labeled.

QUESTION 1 (20 marks) HAS THREE PARTS AND IS COMPULSORY

Question 1.1 (10 marks). Tammy loves doughnuts. The table shown reflects the value Tammy places on each doughnut she eats:

Value of first doughnut	\$0.60
Value of second doughnut	\$0.50
Value of third doughnut	\$0.40
Value of fourth doughnut	\$0.30
Value of fifth doughnut	\$0.20
Value of sixth doughnut	\$0.10

- Use this information to construct Tammy's demand curve for doughnuts.
- If the price of doughnuts is \$0.20, how many doughnuts will Tammy buy?
- Show Tammy's consumer surplus on your graph. How much consumer surplus would she have at a price of \$0.20?
- If the price of doughnuts rose to \$0.40, how many doughnuts would she purchase now? What would happen to Tammy's consumer surplus? Show this change on your graph.

Question 1.2. (4 marks). Consider the following two equations:

- Total surplus = Consumer surplus + Producer surplus
- Total surplus = Value to buyers – Cost to sellers

Show how equation (1) can be used to derive equation (2).

- Consider the following equation: $P = 0.5Q$. Answer the following questions.
 - What is the producer surplus when price is equal to \$4?
 - What is the change of the producer surplus when price changes to \$5?

Question 1.3. (6 marks). Determine the amount of producer surplus generated in each of the following situations.

- Gordon lists his old electric train set for sale on an online auction. He sets a minimum acceptable price, known as his reserve price, of \$75. After five days of bidding, the final high bid is exactly \$75. He accepts the bid.
- Francis advertises his car for sale online for \$5000, but he is willing to sell the car for any price higher than \$2500. The best offer he gets is \$2200, which he declines
- Louis plays organ for the professional hockey team in Calgary and, he likes his job so much that he would be willing to do it for free. However, his annual salary is \$30 000.

ANSWER ANY ONE OF THE QUESTIONS 2 AND 3 (20 MARKS):

QUESTION 2 (20 marks).

2.1. The market for pizza is characterized by a downward-sloping demand curve and an upward-sloping supply curve.

- a. Draw the competitive market equilibrium. Label the price, quantity, consumer surplus, and producer surplus. Is there any deadweight loss? Explain (4 marks).
- b. Suppose that the government forces each pizzeria to pay \$1 tax on each pizza sold. Illustrate the effect of this tax on the pizza market, being sure to label the consumer surplus, producer surplus, government revenue, and deadweight loss. How does each area compare to the pre-tax case? (4 marks).
- c. If the tax was removed, pizza eaters and sellers would be better off, but the government would lose tax revenue. Suppose that consumers and producers voluntarily transferred some of their gains to the government. Could all parties (including the government) be better off than they were with a tax? Explain using the labeled areas in your graph (4 marks).

2.2. Suppose the government imposes a tax on heating oil.

- a. Would the deadweight loss from this tax likely be greater in the first year after it is imposed or in the fifth year? Explain (4 marks).
- b. Would the revenue collected from this tax likely be greater in the first year or in the fifth year? Explain (4 marks).

QUESTION 3 (20 marks) HAS TWO PARTS

3.1. Greater consumption of alcohol leads to more motor vehicle accidents and, thus, imposes costs on people who do not drink and drive.

- a. Illustrate the market for alcohol, labeling the demand curve, the social-value curve, the supply curve, the social-cost curve, market equilibrium level of output, and the efficient level of output. (4 MARKS)
- b. On your graph, shade the area corresponding to the deadweight loss of the market equilibrium. Explain. (4 MARKS). (Hint: The deadweight loss occurs because some units of alcohol are consumed for which the social cost exceeds the Social value.)

3.2. Many observers believe that the levels of [pollution in our society is too high.

- a. If society wishes to reduce overall pollution by a certain amount, why is it efficient to have different amounts of reduction at different firms? (4 MARKS).
- b. Command and control approach often rely on uniform reductions among firms. Why are these approaches generally unable to target the firms that should undertake larger reductions? (4 MARKS).
- c. Economists argue that appropriate corrective taxes or tradable pollution rights will result in efficient pollution reduction. How do these approaches target the firms that should undertake larger reductions? (4 MARKS).