

EC101 DD/EE. Problem Set 7

*Multiple Choice [MC] questions have only one correct answer. Other kinds of questions may have more than one correct answer. You should understand **why** your answers are correct. If you don't understand the meaning of a question, you may write to your own TF, but do not expect him/her to give you answers. The problem set will not be graded, but the way you discuss the problems in your discussion section will affect your discussion-section score.*

1. Michael and LeBron James are very good friends because both of them are interested in two things only: winning NBA championships and writing books about economics. It takes LeBron James 4 years to win an NBA championship, but only 1 year to write an economics book. Michael, while not as tall and not such a great passer, is in excellent shape, so it would take him 10 years to win an NBA championship, and 5 years to write a book.
 - i. Who has an absolute advantage in producing NBA championships? What about writing books about economics?
 - ii. Calculate the opportunity cost for both LeBron James and Michael of winning an NBA championship.
 - iii. Based on your previous answer, who has a comparative advantage in winning NBA championships? What about in writing books?
 - iv. If LeBron James and Michael are such good friends that they only care about the joint number of economics books and NBA championships that they obtain together, what should each of them do during the next 20 years of their lives?

2. Discuss whether the following statements are true or false. Explain:
 - i. If I'm worse at everything than my neighbor, my neighbor will have no reason to trade with me.
 - ii. The Coase Theorem states that every type of externality can be solved by private negotiation.
 - iii. In a market with price-taker buyers and sellers, a tax will always decrease total welfare.
 - iv. When a good imposes a negative externality on society, the government should completely ban the production and exchange of that good.

3. [MC] If there are two producers who each produce the same two products, which of the following cannot happen?
 - a. One producer has an absolute advantage on one of the products.
 - b. One producer has a comparative advantage on one of the products.
 - c. One producer has the comparative advantage on both products.
 - d. One producer has the absolute advantage on both products.

4. Professor M would like to maximize equity in his EC101 class, but he also wants students to work hard.
 - i. The Head TF decides to fail everyone who doesn't get 70% on the final exam, so that students will have to study really hard in order to pass. Is this a good incentive? Is it good for equity?
 - ii. Answer the same question as in the previous part if the Head TF decides he was being too nice and decides to fail everyone with less than 95%.
 - iii. One of the TFs (a much nicer one) wants to give the same grade to all the students (the average grade). Is this a good incentive? Is it good for equity?
 - iv. Professor M decides to *announce* that he will fail everyone who doesn't get 70% on the final exam. However, on the day of the exam, he cancels the exam and gives everyone a good grade. Did students have a good incentive to study? Is it good for equity? Do you think this would be a good idea?

5. For each of the following, determine whether the following statements describe a positive externality, a negative externality, or neither:
 - i. Your roommate buys and lights a scented candle in her room, which makes your whole apartment smell good.
 - ii. Your uncle buys and smokes cigars around you, and this increases your risk of getting lung cancer.
 - iii. You own a café on Comm Ave. A bakery opens across the street, which takes away some of your customers.
6. The following table shows the private value, private cost, and social value for a market with a positive externality.

<i>Quantity</i>	<i>Private Value</i>	<i>Private Cost</i>	<i>Social Value</i>
1	27	6	34
2	24	10	31
3	21	14	28
4	18	18	25
5	15	22	22
6	12	26	19

- i. What is the equilibrium quantity of output in this market?
 - ii. What is the socially-optimal level of output in this market?
 - iii. How large would a subsidy need to be in this market to move the market from the equilibrium level of output to the socially-optimal level of output?
7. [MC] In the presence of pollution, more abatement increases social surplus whenever
 - a. the level of pollution is greater than zero.
 - b. makes the amount of abatement less than the amount of remaining pollution.
 - c. the marginal cost of abatement is less than the marginal benefit of abatement.
 - d. the marginal cost of abatement is greater than the marginal benefit of abatement.
8. At its peak, the *Medellin Cartel*, led by the infamous *Pablo Escobar*, was estimated to control more than 90% of the global cocaine market. Explain why a drug cartel can have a comparative advantage in trading illicit drugs.
9. It is often argued that higher education leads to positive externalities.
 - i. Give some reasons why education may lead to positive externalities.
 - ii. Draw on a graph the private benefit, the social benefit and the marginal cost.
 - iii. Is the equilibrium without government intervention efficient? If not, how can the government increase social surplus?
 - iv. Draw the effect of a government intervention on the previous graph. Has social welfare increased?
10. Give 3 (new, not in the notes or problem set) examples of positive externalities and 3 (new, not in the notes or problem set) examples of negative externalities. For each example, mention a mechanism that would increase total surplus by inducing people to internalize the externalities.

11. In the following situations there is a deadweight loss. Graph each of these situations and shade the area corresponding to the deadweight loss.
- Binding price ceiling.
 - Binding price floor.
 - Tax.
 - Subsidy.

12. Carl is a carpenter and builds small homes. Peter is a kid who has no real skills and lives next door. The following table shows how many hours it takes for them to build a home and mow Carl's grass. Using the table, answer the following questions:

Hours to complete task		
Person	Mow Carl's lawn	Build a home
Carl	1 hour	200 hours
Peter	2 hours	2000 hours

- Who has the absolute advantage in each task?
 - Who has the comparative advantage in each task?
 - Suppose Peter wants a home, and Carl wants to have his lawn mowed every week. Could Carl and Peter both benefit from trade?
13. True or false:
- The equilibrium in a perfectly competitive without externalities market is always efficient (i.e. it maximizes total surplus).
 - A competitive equilibrium in the presence of externalities is efficient.
 - In a perfectly competitive market with no externalities, a subsidy will always create deadweight loss.
 - In a perfectly competitive market with a positive externality, a subsidy will always increase total welfare.