Introductory Microeconomics
Homework 1: Opportunity Cost and Trade

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1. T/F. If one country has the absolute advantage in the production of all goods, there won't be trade.

2. T/F. With two goods, it is possible to have a comparative advantage in both of them.

3. T/F. With trade it is possible to consume outside of your production possibilities frontier (PPF).

4. T/F. Specialization according to comparative advantage can increase total world output.

5. T/F. David Ricardo was the first one to introduce the concept of comparative advantage.

6. (Mankiw 3.1) Maria can read 20 pages of economics in an hour. She can also read 50 pages of sociology in an hour. She spends 5 hours per day studying.

    (a) Draw her production possibilities fronteir (PPF).

    (b) What's Maria's opportunity cost of reading 100 pages of sociology?

7. (Mankiw 3.4) Suppose that there are 10 million workers in Canada and that each of these workers can produce either 2 cars or 30 bushels of wheat in a year.

    (a) What is the opportunity cost of producing a car in Canada? What is the opportunity cost of producing a bushel of wheat in Canada? Explain the relationship between the opportunity costs of the two goods.

    (b) Draw Canada's production possibilities frontier. If Canada chooses to consume 10 million cars, how much wheat can it consume without trade? Label this point on the production possibilities frontier.

    (c) Now suppose that the United States offers to buy 10 million cars from Canada in exchange for 20 bushels of wheat per car. If Canada continues to consume 10 million cars, how much wheat does this deal allow Canada to consume? Label this point on your diagram. Should Canada accept the deal?

8. (SMG 19.30) In Japan, one worker can make 5 tons of rubber or 80 radios. In Malaysia, one worker can make 10 tons of rubber or 40 radios.

    (a) Who has the absolute advantage in the production of rubber or radios?

    (b) Calculate the opportunity cost of producing one additional radio in Japan and in Malaysia.

    (c) Calculate the opportunity cost of producing one additional ton of rubber in Japan and in Malaysia. Which country has a comparative advantage in the production of radios?

    (d) In which products should each country specialize? Why?

9. (Mankiw 3.6) In Boston a worker can produce 3 red socks in an hour and 3 white socks in an hour. In Chicago a worker can produce 2 red socks in an hour and 1 white sock in an hour.

(a) What's the opportunity cost of producing one white sock in each city?

(b) Which city has the absolute advantage in the production of each color? Which city has the comparative advantage in the production of each color?

(c) If the cities engage into trade, which color will they export?

(d) What's the range of prices at which mutually beneficial trade can occur?

10. (Mankiw 3.8) Suppose that in a year, an American worker can produce 100 shirts or 20 computers, and a Chinese worker can produce 100 shirts or 10 computers.

(a) For each country, graph the production possibilities frontier. Suppose that without trade, the workers in each country spend half their time producing each good. Identify this point in your graphs.

(b) If these countries were open to trade, which country would export shirts?

(c) Explain at what range of prices of computers (in terms of shirts) the two countries might trade.

(d) Give a specific example of a trade and show it in your graphs.