Boston College
Problem Set 1, Fall 2012
EC 131 - Principles of Microeconomics
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Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back of the page. Be succinct. Longer answers don't increase your chance of being right, but increase your chance of saying something wrong. **Show how you got your answers in mathematical questions**

Name: _____

1. Say whether the propositions are True or False. If they are False, justify.
   (a) Microeconomics is the field of economics that studies behaviors in an aggregate way

   Solution: False. Microeconomics studies behaviors more closely. Aggregation of behaviors is studied in Macroeconomics.

   (b) Economic models don't have the objective of representing the complex details of reality

   Solution: True.

   (c) The Production Possibilities Frontier model determines how much of each item is going to be produced

   Solution: False. The PPF model determines all the possibilities that the technology being used allow for production. The individuals' preferences and trade will determine which quantities of each good will actually be produced/consumed.

2. Explain the difference between absolute advantage and comparative advantage. Which is more important in determining trade patterns, absolute advantage or comparative advantage? Why?

Solution: Absolute advantage refers to productivity, as in the producer who can produce a product at a lower cost in terms of the resources used in production. Comparative advantage refers to the producer who can produce a product at a lower opportunity cost. Comparative advantage is the principle upon which trade patterns are based. Comparative advantage is based on opportunity cost, and opportunity cost measures the real cost to an individual or country of producing a particular product. Opportunity cost is therefore the information necessary for an individual or nation to determine whether to produce a good or buy it from someone else.

3. The only two countries in the world, Alpha and Omega, face the following production possibilities frontiers.

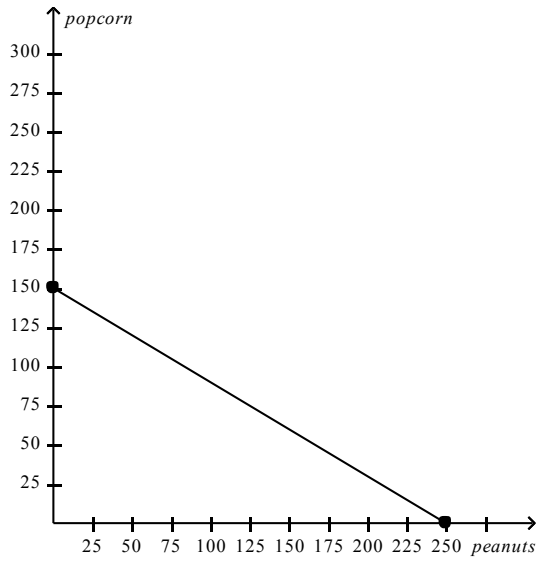

Figure 1: Alpha's Production Possibilities Frontier

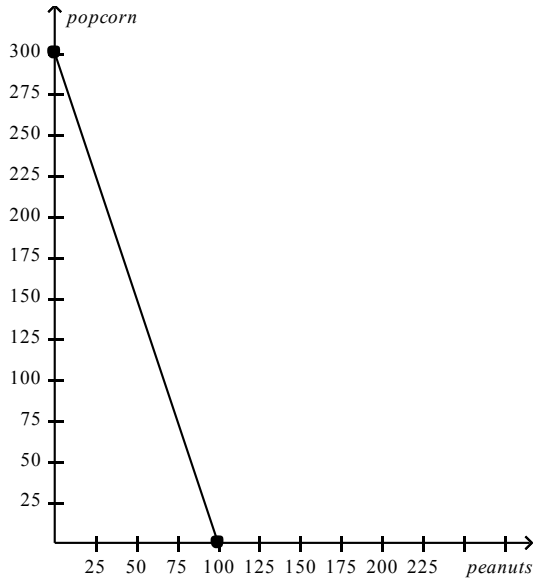

Figure 2: Omega's Production Possibilities Frontier

(a) Assume that each country decides to use half of its resources in the production of each good. Show these points on the graphs for each country as point A.

Solution: Alpha would be producing 125 units of peanuts and 75 units of popcorn (point A on its production possibilities frontier) and Omega would be producing 50 units of peanuts and 150 units of popcorn (point A on its production possibilities frontier).

(b) If these countries choose not to trade, what would be the total world production of popcorn and peanuts?

Solution: The total world production of peanuts would be 175 units and the total world production of popcorn would be 225 units.

(c) Now suppose that each country decides to specialize in the good in which each has a comparative advantage. By specializing, what is the total world production of each product now?

Solution: The total world production of peanuts would now be 250 units and the total world production of popcorn would now be 300 units.

(d) If each country decides to trade 100 units of popcorn for 100 units of peanuts, show on the graphs the gain each country would receive from trade. Label these points B.

Solution: Alpha would be producing 250 units of peanuts and would trade 100 of them to Omega, leaving Alpha with 150 units of peanuts. Alpha would then receive 100 units of popcorn from Omega. Omega would be producing 300 units of popcorn and would trade 100 of them to Alpha, leaving Omega with 200 units of popcorn. Omega would then receive 100 units of peanuts from Alpha.

4. Assume that Japan and Korea can switch between producing cars and producing airplanes at a constant rate.

	Hours Needed to Make 1		Quantity Produced in 2400 Hours	
	Car	Airplane	Cars	Airplanes
Japan	30	150	80	16
Korea	50	150	48	16

Table 1: Production technology for Japan and Korea

(a) Draw the production possibilities frontier for both countries, clearly labeling the axes and quantities.

Solution:

(b) Assume that Japan and Korea each has 2400 hours available. If each country divides its time equally between the production of cars and airplanes, then what is the total production of cars and airplanes?

Solution: 64 cars and 16 airplanes.

(c) Suppose that without trade, Japan produced and consumed 50 cars and 6 airplanes, and Korea produced and consumed 27 cars and 7 airplanes. Both countries decide then to specialize in the production of the good in which it has a comparative advantage and trade 28 cars for 8 airplanes. What is the consumption in both countries of cars and airplanes after trade?

Solution: Japan: 52 cars and 8 airplanes
Korea: 28 cars and 8 airplanes