

Economics 433: Advanced International Trade
Fall, 2006

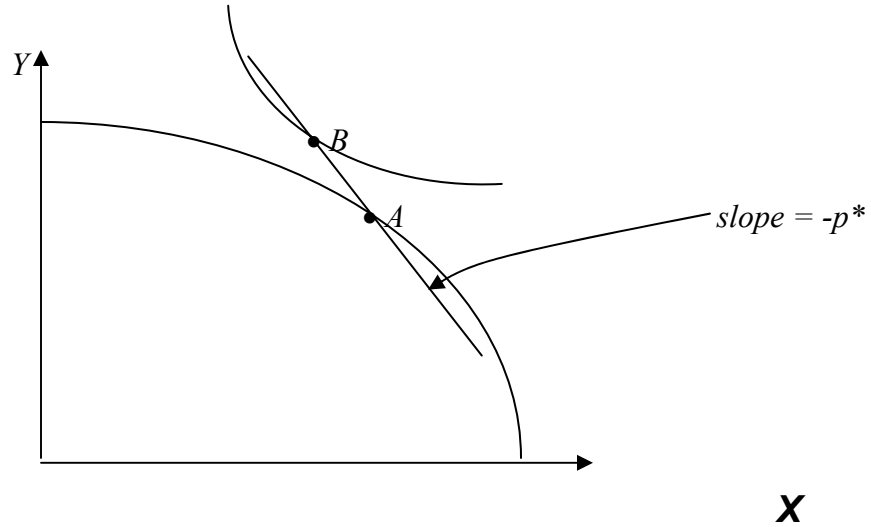
Practice problems 1

1. **(15 minutes)** Consider a Ricardian model in which two countries (East and West) produce two goods using only labor. The marginal product of labor in each type of production is given by the chart below.

	Workers needed per unit of output	
	<i>East</i>	<i>West</i>
Food (<i>F</i>)	1	$\frac{1}{4}$
Clothes (<i>C</i>)	1	$\frac{1}{2}$

- a. List the goods in which *East* has an absolute advantage _____. List the goods in which *West* has an absolute advantage _____. List the goods in which East has a comparative advantage _____. List the goods in which West has a comparative advantage _____.
- b. In autarky, what is the relative price of food in East? $\left(\frac{P_f^a}{P_c^a}\right)_{East} =$ _____. In West? $\left(\frac{P_f^a}{P_c^a}\right)_{West} =$ _____.
- c. People in both countries insist on consuming one unit of food per unit of clothing, *regardless* of their relative prices. Are there gains from trade between these two countries? _____ (yes, no). Briefly explain.
- d. Continue to assume that preferences are as described in part c above. To the extent that gains from trade occur, are they due to specialization, to exchange, or to some combination? _____ (specialization, exchange, combination). Briefly explain.

2. **(10 minutes)** Consider an economy that produces two goods (X and Y) using two factors (K and L) and trades them at global price ratio $p^* = P_x^*/P_y^*$. Production functions and utility functions are homothetic, and the former exhibit constant returns. The production possibility frontier for this economy and one of the economy's community indifference curves are depicted below. Suppose that production takes place at point A and consumption at point B. Identify two reasons why the situation depicted below does not represent a competitive equilibrium.

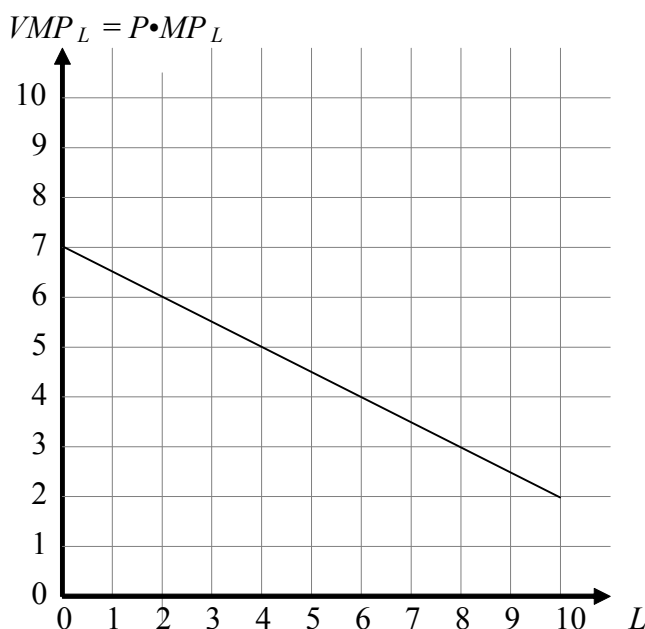


Reason 1 and explanation:

Reason 2 and explanation:

3. Are there gains from trade between two identical countries? Explain.

4. Consider a small open economy that produces a single good (X) using capital (K) and labor (L): $X = F(K, L)$. The good sells at price P in world markets, and the value of the marginal product of labor is graphed below.



- a) Assuming that there are 6 workers in this economy, what is the total *value* of output? $P \cdot X = \underline{\hspace{2cm}}$ (You don't need to know the price of output or the capital stock to answer this question—they are reflected in the VMP_L graph.)
- b) If no foreign labor is available, how much does domestic labor earn? $w \cdot L = \underline{\hspace{2cm}}$
 What is the wage rate? $w = \underline{\hspace{2cm}}$ How much does capital earn? $r \cdot K = \underline{\hspace{2cm}}$ If the capital stock is $K = 60$, what is the cost of capital? $r = \underline{\hspace{2cm}}$.
- c) Suppose now that it becomes possible to use foreign workers—i.e., to outsource labor—at the foreign wage rate of $w^* = 3$. How many foreign workers will this country use? $\underline{\hspace{2cm}}$. How many *total* workers will this country use? $\underline{\hspace{2cm}}$. What will the *total* value of production be? $\underline{\hspace{2cm}}$. How much will capital earn? $\underline{\hspace{2cm}}$. How much will domestic labor earn? $\underline{\hspace{2cm}}$. How much will foreign labor earn? $\underline{\hspace{2cm}}$.
- d) Using your answer to part (c), indicate who the winners and losers from outsourcing are. Winners $\underline{\hspace{2cm}}$ Losers $\underline{\hspace{2cm}}$ Do the winners gain more than enough to compensate the losers for their losses? (yes, no) $\underline{\hspace{2cm}}$

6. Consider a specific factors model with the following features:

- There are two countries: Homeland and Strangeland
- There are two goods: X and Y.
- Consumers in both countries have the same homothetic tastes.
- Each is produced with standard neoclassical technologies, but X is produced with land (N) and labor (L), while Y is produced with capital (K) and labor (L).
- Homeland and Strangeland have the same number of workers. However, homeland has lots of capital and not much land, while Strangeland has lots of land and not much capital.

a) Draw the production possibility frontiers for Homeland and Strangeland on the same graph below. (You do not have enough information to characterize their precise shape, but you do have enough information to qualitatively characterize their relative shapes.)



b) Draw the relative supply curves for each country on the graph below. (Again, you do not have enough information here to characterize their curvature or label points with numbers. The important thing is get their position relative to each other;.)



b) If the countries trade with each other (and there are no other countries), which one will export X? _____ In each cell of the chart below, write “wins,” “loses” or “ambiguous” to indicate how each group’s purchasing power is affected by trade (relative to autarky).

	In Homeland	In Strangeland
Land owners		
Capital owners		
Workers		

