

## Problem Set 1: Tools of Analysis for International Trade Models, The Ricardian Model of Trade

1. Suppose that country A produces two goods, X and Y, under conditions of constant opportunity costs. Given its resources, the maximum X it can make is 500 units and the opportunity cost of making Y is 2. What is the maximum amount of Y that it can produce? Draw a graph and explain.
2. For each of the following cases in the table below, determine the following:
  - (a) the direction of absolute advantage;
  - (b) the pre-trade relative prices;
  - (c) the direction of comparative advantage;
  - (d) the limits to the relative wage rate

Hours of Labor Required to Produce S or T				
<b>Case 1</b>		A	B	
S		6	15	
T		2	12	
<b>Case 2</b>		A	B	
S		10	5	
T		4	5	
<b>Case 3</b>		A	B	
S		10	8	
T		20	4	
<b>Case 4</b>		A	B	
S		4	9	
T		2	3	

Table 1: Unit labor costs

3. Suppose that there are 20000 hours of labor available in country A. Five hours of labor are required to produce one unit of good S, whilst 4 hours of labor are required to produce one unit of good T. Find the shape and dimensions of A's PPF.
4. Show that less than complete specialization in the classical model leads to a lower level of welfare than complete specialization.
5. Consider two countries, A and B, with technologies given by case 3 in table 1 above. Suppose that the wage rate in A,  $W_A$ , equals \$10 per hour; then for mutually beneficial trade to occur, the wage rate in B, when measured in dollars,  $ExW_B$ , must lie in the range \$X to \$Y. Calculate X and Y and explain your answer.

6. Suppose that country A had 20000 hours of labor available and that country B had 15000 hours of labor available. Using the information for unit labor costs from Case 2 in table 1 above
- a. Draw a graph of the World PPF
  - b. Suppose that the world price ratio  $(P_S/P_T)^W = 2$ . Which country would produce which good(s)?