

Problem Set 1

EC 391: International Economics I

Due on: Monday July 9, 2018

True/False/Uncertain (20 points)

Instructions: For the each of the following statements, indicate whether it is true, false, or if the assertion is indeterminate. In all cases, defend your answer with a concise explanation. **To earn full credit, you must include an explanation with your answer.**

1. According to the Ricardian model, comparative advantage fully determines wage differentials across countries.
2. An increase in the price of exports and imports leads to an improvement a country's terms of trade.
3. The Ricardian model tells us that there are gains to be made from trade, but that winners and losers are inevitable.
4. One unit of labor in the UK can produce either 4 TVs or 1 liter of whiskey. One unit of labor in Japan can produce either 2 TVs or 1/2 liter of whiskey. Based on this information, the UK and Japan would both benefit from trade if they each produced according to their comparative advantage.
5. "An improvement in the terms of trade increases welfare only if the country increases its quantity of exports in response. If a country is unwilling or unable to increase exports when their price rises, then the price increase does it no good." (Hint: It may help to draw diagrams using indifference curves.)

Longer Questions (30 Points)

1. (**Trade with Changing Technology**) Refer to the following table for this question. Assume that each country has 100 laborers.

Table 1: Hourly Production in China and France

	China	France
Pairs of boots	4	8
Bottles of wine	2	16

- (a) Which country has a comparative advantage in the production of boots?

- (b) Provide the range of possible equilibrium international relative prices of wine.
- (c) Suppose that researchers in France discover a new technology that doubles the marginal product of labor in boots. Would China and France continue to trade? Explain why.
2. **(Trade with Changing Population)** Refer to the following table for this question. Assume that there are 2 workers in Mexico and 3 workers in the US.

Table 2: Hourly Production in Mexico and the US

	Mexico	US
Bottles of tequila	7	5
Pounds of rice	5	10

- (a) Determine the pre-trade relative price of tequila in Mexico and the US.
- (b) Given your answer in (a), which country has a comparative advantage in the production of rice?
- (c) What is the lowest international relative price of tequila that Mexico would be willing to accept to engage in trade with the US? Explain why.
- (d) Suppose now that the number of laborers in the US is 300 while the number of laborers in Mexico remains the same at 2.
- (i) Determine the range of possible terms of trade for the US.
- (ii) Which country gains more from trade? Briefly explain why.
3. **(Ricardian Model with Many Goods)** We are given the following marginal products of labor for Home and Foreign:

Table 3: MPL_i for Home and Foreign

Good i	Home	Foreign
Cheese	2	$\frac{1}{2}$
Wine	1	1
Coffee	3	4

- (a) For which of these goods does Home have the highest opportunity cost?
- (b) In a world trade equilibrium, wages are the same in Home and Foreign (i.e. $w = w^*$). What good(s) will Home produce? What good(s) will Foreign produce?
- (c) Now suppose that Foreign has discovered a technology that allows it to be equally productive in the production of cheese as Home. How do your answers to (a) and (b) change when $MPL_{cheese}^* = MPL_{cheese}$?