

## ECO 101A: Tutorial # 2

Date: 24/01/2017

1. In a Ricardian set up, consider two economies whose endowments and technologies are those described below. Each has a fixed endowment of labor.

These economies can produce two goods, using the indicated constant amounts of labor per unit of output:

|           | Labor endowment | Per-unit labor requirement for producing |   |
|-----------|-----------------|--|---|
|           | L               | X  | Y |
| Country A | 60              | 1  | 2 |
| Country B | 120             | 2  | 3 |

- a) Draw the production possibility frontier (PPF) for each of these countries.
  - b) Calculate their autarky relative prices of good X,  $p_x/p_y$ .
  - c) Which country has a comparative advantage in good X? Which in good Y?
  - d) What are the autarky wages of workers in country A, in units of good X per unit of labor? In units of good Y per unit of labor? What are the autarky wages of workers in country B, also in units of good X and in units of good Y? Can you tell which country's workers are better off in autarky?
2. Consider the simple Ricardian model involving two countries: US and France. Suppose the exogenous variables in the model take the values in the following table.

Table: Exogenous Variable Values

|               |                |                |            |
|---------------|----------------|----------------|------------|
| United States | $a_{LC} = 1$   | $a_{LW} = 2$   | $L = 24$   |
| France        | $a_{LC}^* = 6$ | $a_{LW}^* = 3$ | $L^* = 24$ |

- a) Fill in the blanks: The cost of producing cheese in the United States is \_\_\_\_\_ gallon of wine per pound of cheese. In France, it is \_\_\_\_\_ gallons per pound.
- b) Plot PPF for both the countries in one graph.
- c) Fill in the blanks: The opportunity cost of cheese production is lower in the \_\_\_\_\_ and thus indicates that the \_\_\_\_\_ has the comparative advantage in cheese production.
- d) To see the effects of specialization and free trade, we must compare it to a situation of no trade, or autarky. Thus we must construct an autarky equilibrium first. For the purpose of this example, we will make up a plausible production and consumption point under autarky. Show these points on country's PPFs.

Table: Autarky Production and Consumption

|               | Cheese (lbs.) | Wine (gals.) |
|---------------|---------------|--------------|
| United States | 16            | 4            |
| France        | 3             | 2            |
| World Total   | 19            | 6            |

- e) Prove that when countries specialize in their comparative advantage good, world output of both wine and cheese rises.
- f) France, which began with 3 pounds of cheese and 2 gallons of wine in autarky, suppose now decides to have 6 pounds of cheese and 3 gallons of wine. Trade must occur. What will be the terms of trade?