**Economics 181**
**Assignment 1**
**Due Date: Thursday, September 14**
**Beginning of Class**

1.  We are given the following labor input requirements:

|       | Cloth   | Wheat   |
|-------|---------|---------|
| UK    | 2 hours | 6 hours |
| USA   | 3 hours | 2 hours |

(a)     What is the relative price of cloth in terms of wheat in the UK?  In the USA?

(b) Where will the free trade price settle post trade?  Who will export which good?

(c) If the post-trade relative price of cloth in terms of wheat is equal to 2/3, show what happens to consumption of cloth and wheat in the US and UK pre and post trade.  Use this information to calculate the wage in the USA relative to the UK post-trade.

(d) Show that unit labor costs post-trade are consistent with the pattern of trade.

2. We are given the following labor input requirements for Uruguay and Chile:

|            | Uruguay | Chile |
|------------|---------|-------|
| Insulation | 5       | 2.5   |
| Grain      | 15      | 30    |
| Beef       | 30      | 30    |
| Video Tape | 2       | 3     |

(a)  What is the order of products from greatest to least comparative advantage for Uruguay relative to Chile?

(b) Use the numbers provided to draw the relative demand for labor. The y-axis of the diagram should display the relative wage of Uruguay to Chile ($w_u/w_c$)

(c)  In equilibrium both Uruguay and Chile produce Video Tapes. What other products are produced by Uruguay, and what other products are produced by Chile?

Uruguay:

Chile:

(d) What is the relative wage ($w_u/w_c$) for Uruguay to Chile when the equilibrium results in both countries producing Video Tapes?

3. Home (no asterisk) and Foreign (asterisk) produce cheese and wine with the following unit labor requirements:

|  | Home | Foreign |
|---|---|---|
| Cheese | alc = 5 | alc* = 6 |
| Wine | alw = 2 | alw* = 6 |

Home and Foreign have total labor forces of L=100 and L* = 200 workers

(a) Graph each country's production possibility frontier and calculate the opportunity cost of cheese in terms of wine. Which country has an absolute advantage in cheese production, which in wine production? Which country has a comparative advantage in cheese production, which in wine production?

(b) Using the graph from your preceding answer, draw each country's consumption possibilities in the absence of trade. Calculate the relative prices of cheese in terms of wine in autarky.

(c) Both countries open up to free trade. Graph the relative world supply of cheese to wine and its response to the relative world price of cheese $Pc/Pw$ based on the unit labor requirements. Provide specific values on the axes.

(d) EXTRA CREDIT: World consumer demand for cheese relative to wine depends on the relative price of the two goods: $(Qc + Qc^*)/(Qw + Qw^*) = 6 – 5(Pc/Pw)$
Graph the relative demand curve. Calculate the relative price $Pc/Pw$ of cheese in world trade equilibrium. Calculate the production of $Qc, Qc^*$, $Qw$ and $Qw^*$. Calculate the equilibrium wage rates $w$ and $w^*$ under free trade.