1: Short Answers

Instructions: Respond to each question with a few sentences.

(a) What were Canada's short-run adjustment costs as a result of NAFTA? Why wasn't this an issue in the long run?

(b) Mexican firms saw an increase in competition as a result of NAFTA. Why did some firms go out of business and others strive?

(c) Give 3 example of differentiated goods and 3 examples of undifferentiated goods.

(d) In monopolistic competition, who does trade benefit, and who does trade hurt? Explain.

(e) Describe the skill level of immigrants coming into the United States. Why do workers of these skill levels migrate?

(f) Why aren't all wages across the world equal as our model's predict? Will they eventually equalize given a long enough time line?

(g) There is an influx of capital in a country, in the short run. How will this affect the long run rental rate of capital?

2: Monopolistic Competition

(a) Derive the Gravity Equation for countries A and B using the following equation: $Trade = (GDP_A)(\frac{1}{dist^n})$(Share of the World GDP for Country B), where $dist$ is the distance between the countries and n is a random parameter.

(b) Pieland is filled with firms who produce different varieties of pie. Firm A has a total cost function of $TC_A = 5Q + 25$, and they face an individual demand of $d_0 = 50 - 2P$, where P is the price of pies from Firm A and d_0 is the quantity demanded. Find the short run equilibrium price and quantity for Firm A.

(c) How much profit does Firm A make in the short run?

(d) Suppose Firm A's profits attract firm B into the market. Firm B's total cost can be described as $TC_B = Q + 10$. Will Firm B's entry run Firm A out of business? Why or why not?

(e) Suppose in the long run, Firm A faces the demand $d_1 = 15 - P$. Using only the zero profit condition, find the long run equilibrium price and quantity. Assume that Firm A's total cost function does not change at all.

(f) Firm B produces 10 units in the long run. Find a possible demand function that Firm B may face.

3: Migration and FDI

(a) In the short run, consider 2 countries: Home and Foreign (denoted with *). Each country sells 2 goods: Apples and 3D printers, used to make ornamental apples from plastic. Assume the amount of capital in Home is 10 and the amount of capital in Foreign is 20. Also, let the price of apples be 2 in Home ($P_A = 2$) and 1 in Foreign ($P_A^* = 1$). The price of printers is 1 in both countries, while the amount of workers is 100 in Home and 200 in Foreign. Finally, let $MPL_A = 5L_A^{-1/2}$, $MPL_A^* = 75(L_A^*)^{-1/3}$, $MPL_P = 7(\overline{K})(L_P)^{-1/2}$, $MPL_P^* = 5(\overline{K}^*)(L_P^*)^{-1/3}$. Growing tensions of rival political parties results in 50 workers leaving Foreign for Home. Additionally, home invests 5 units of capital in Foreign firms to provide more 3D printers to be used in war. Calculate the effect of these changes on the equilibrium $L_A, L_P, w, L_A^*, L_P^*, w^*$. Be sure to illustrate the changes with a graph with wages on the y-axis and labor on the x-axis.

(b) Draw the PPF for the Home country before the migration and FDI. Show how the FDI and migration in part (a) change the PPF. How do the quantities produced in equilibrium change? You do not need to calculate specific changes.

(c) Using the world labor market graph, illustrate the gains to the Home country when $w = 8, w^* = 12$. Assume $L = 100$ and $L^* = 150$ initially. 50 workers then leave Home to go to Foreign which causes the wage to be equal to 10 in both countries. Find the gains to the home country. Given that workers are leaving Home, explain how this is considered a gain to Home. Use MPL in your explanation. You may assume that all the wage functions are linear.

(d) In the long run, the country of Freedonia produces apples, a labor intensive good. They also produce robots, a capital intensive good. A large portion of capital in Freedonia is destroyed during war. The war also resulted in many people leaving the country to escape the impending destruction. Using a box diagram, describe the effect these changes have on the amount of capital and labor in each industry. Also, how do the wage and rental rate of capital change?

(e) Draw the box diagram for Freedonia before the migration and FDI occur. Assume $\frac{K_A}{L_A} = \frac{1}{3}$, $\frac{K_R}{L_R} = \frac{9}{7}$, $\overline{K} = 12$, $\overline{L} = 16$, $K_A = 3$. Label all relevant quantities on the diagram. Now assume 3 units of capital flow out while 5 workers come into Freedonia. Describe the new L_A, L_R, K_A, K_R values. There is no need to calculate the specific changes, only the direction of the changes. Show these changes on the diagram.