Final Exam
December 20, 2000

Answer all questions. Write your answers in a blue book.

Be sure to look ahead and budget your time. Don't waste time on parts of questions that you can't answer. Leave space and come back to them if you have time.

1. Consider a small economy able to produce and consume vectors of goods X and C respectively, subject to vectors of prices, p: in autarky, $X^A=C^A$ at prices p^A; and in free trade, $X^F \mathbf{1} C^F$ at prices $p^F \mathbf{1} p^A$.

   a. Show that $p^F C^F > p^F C^A$, stating clearly any assumptions that you need to get this result.

   b. Interpret the result in part (a) in terms of what it tells you about the gains from trade.

   c. Suppose now that you learn that one of these goods is cigarettes, consumption of which generates a negative externality reducing the welfare of other nearby consumers. How, if at all, does that alter or undermine the proof in part (a) and the interpretation in part (b)?

   d. Narrowing your attention to just two goods, cigarettes and an aggregate of all others taken as numeraire so that p is now the relative price of cigarettes, how are the gains from free trade versus autarky affected if $p^F<p^A$? What if $p^F>p^A$?

   e. Considering the externality caused by cigarette consumption, could an import tariff ever be beneficial? How about an import subsidy? Or an export tax or subsidy?

   f. Could a trade tax or subsidy ever be optimal in these circumstances?

2. The world consists of two countries, America and Europe, who are able to produce and consume two goods, beef and clothes, using two factors, land and labor. America is relatively well endowed with land, compared to Europe. Production of beef is relatively intensive in the use of land, compared to production of clothes. All markets are perfectly competitive and there are no distortions. Trade between the countries is free and frictionless. All consumers demand strictly positive amounts of both goods, at all finite prices. Answer the following questions, using whatever tools are appropriate to explain your answers.

    a. What can you say for sure about the pattern of trade and the pattern of production, based on this information alone? That is, who exports and imports what? And who produces what?

    b. Explain, using the Integrated World Economy, how you would determine whether or not factor price equalization (FPE) occurs in this equilibrium.

    c. Suppose now that European consumers suddenly become afraid to eat beef. Explain why this will reduce the relative price of beef in both America and Europe if there initially was FPE. If there initially was *not* FPE, could the effects on relative prices be any different?

    d. Assuming FPE both before and after the beef scare, what will be the effect on *real* factor prices of both land and labor in America?

    e. If there was FPE before the beef scare, is it possible that the scare could move the world to an equilibrium without FPE? Show how this can happen, or why it can't. In the former case, say also whether and how your answer to part (d) would be changed.

    f. What can you say about the welfare of America as a whole as a result of this beef scare?

3. The government of a country, Mercantilia, persuaded of the desirability of trade, has decided to provide an export subsidy. It first identifies those sectors of the economy that are already exporting, then provides a 10% *ad valorem* export subsidy to each of them. It finances the subsidy using a nondistorting lump sum tax borne equally by every resident of the country. Without doing any formal analysis, describe what you would expect to be the effects of this subsidy on patterns and amounts of production and trade, and on the well-being of affected individuals in the country, using each of the following models:

    a. The small-country, two-good, specific factors model

    b. The continuum-of-goods Ricardian model

    c. The two-country, two-good Heckscher-Ohlin model

    d. The Krugman one-sector monopolistic competition model

    e. The Brander-Spencer export duopoly model