Final Exam
August 15, 2002

Answer all questions, in blue book. Plan ahead and budget your time. The questions are worth a total of 90 points, as indicated. You will have 120 minutes to complete the exam.

1. [18 points] The figure on the next page shows domestic demand and supply curves for a country. (The same figure appears twice on the page, for your convenience.) Use them, together with the grid for measuring prices, quantities, and areas, to give numerical answers the questions below, assuming that
   - The world price of the good is $8 per ounce.
   - The country is small.
   - When it initially trades, the country levies a tariff on imports of $4 per ounce.

   You should show your work if you want a chance for partial credit for wrong answers.

   a. (2 points) What is the country's autarky price?

   b. (4 points) With trade and with the $4 tariff, what is the domestic price, and what quantity does the country import?

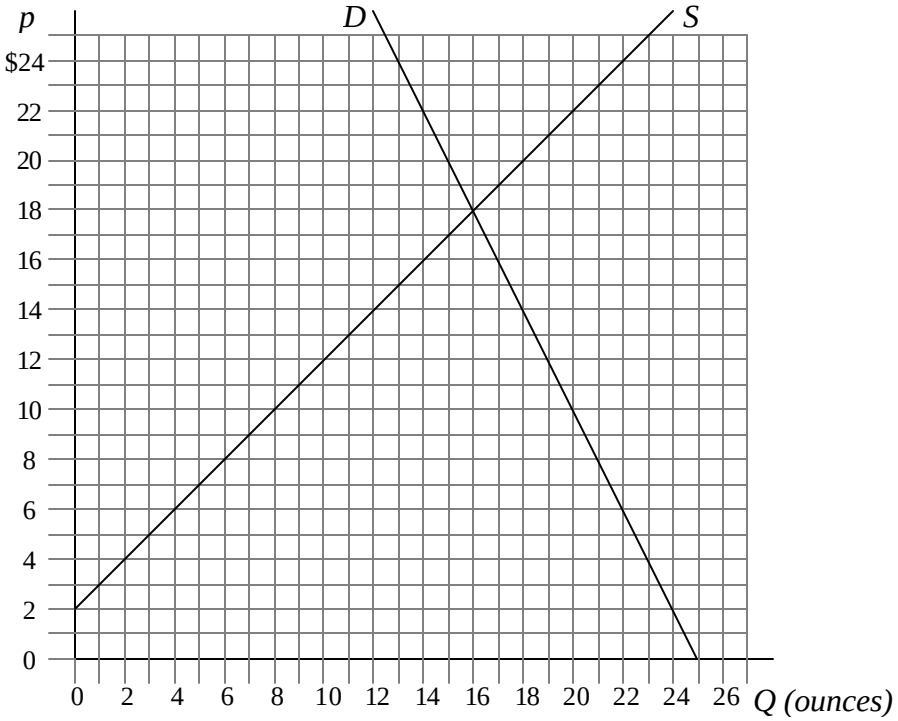
   c. (8 points) Suppose that the size of the tariff is increased from $4 to $8, the world price remaining unchanged. Find the following changes that are due to this tariff increase (you are *not* comparing here to free trade, but rather to the initial situation with the $4 tariff):

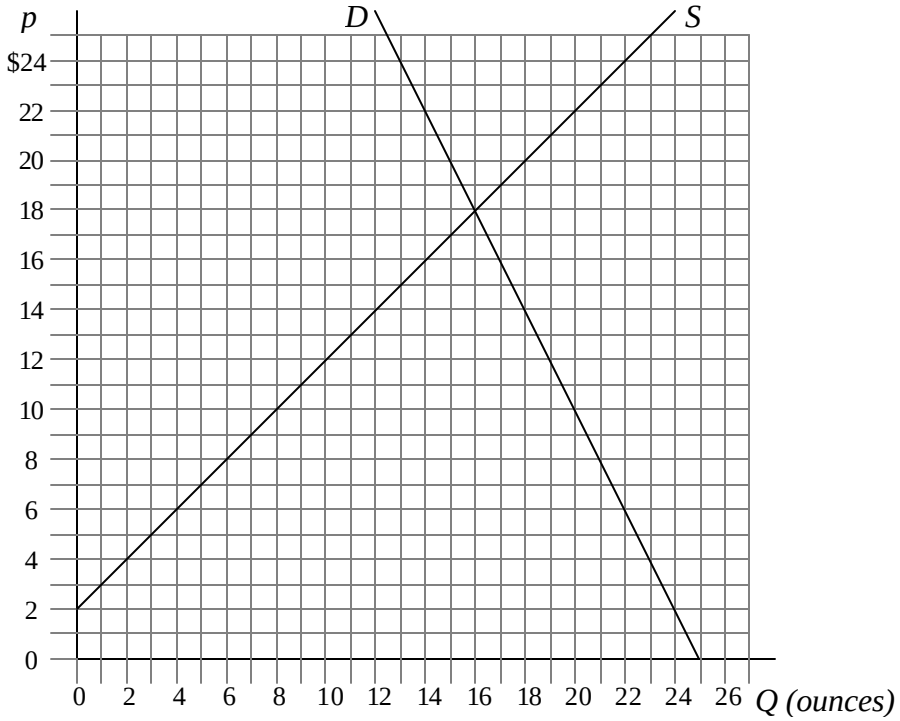
      i. The change in welfare of suppliers.
      ii. The change in welfare of demanders.
      iii. The change in tariff revenue.
      iv. The change in welfare of the country as a whole.

   d. (2 points) Suppose that in part (c) the new tariff had been $12 instead of $8. What would the change in welfare of suppliers (compared again to the initial $4 tariff) have been in that case?

   e. (2 points) Suppose that the country were to replace its tariff with a quota permitting imports of 6 ounces of the good. What would be the tariff equivalent of that quota?

Figure for question 1. It is repeated so that if it gets too cluttered, you can start again. Feel free to tear off page 1 of the exam so that you can look at it alongside the figure.





2. [24 points] Consider a small economy, initially in autarky, in a world where there are two goods that can be produced, food and cloth. The relative price of food in the country in autarky is lower than the relative price of food on the world market. Suppose that the country now opens to free international trade. Then for each of the models listed below, answer the following questions, showing the reasoning behind your answers.
   - How will trade change the fraction of the labor force that is employed in the food sector?
   - How will trade change the real wage of labor that was initially employed in the food sector?
   - If non-distorting transfers were possible and used within the country, would it be possible for trade to benefit everybody in it? And if so, to whom would such transfers have to be given?

   a. The Ricardian Model

   b. The Extreme Specific Factors Model (all factors immobile)

   c. The Standard Specific Factors Model (capital immobile between sectors, labor mobile)

   d. The Heckscher-Ohlin Model (assume here that food is relatively labor intensive, compared to cloth)

3. [18 points] The world produces three goods using two factors, labor and capital. Prices with free trade are such that there exist two cones of diversification. Consider a country, Ignominia, that produces a small amount of the most labor-intensive good, X_1; it produces and exports the good of intermediate labor-intensity, X_2; and it produces none at all of the most capital-intensive good, X_3.

   a. (4 points) Draw the Lerner Diagram to illustrate how Ignominia's factors are allocated among the three sectors.

   b. (6 points) How do Ignominia's factor prices compare to those in the country or countries from which it imports X_1? How do they compare to those in countries from which it imports X_3?

   c. (2 points) Suppose that Ignominia's government were now to pay a small subsidy for exports of X_2, and simultaneously prevent any of X_2 from being imported. Assuming that Ignominia is small enough for world prices to remain unchanged, how will prices inside Ignominia change?

   d. (6 points) For the price change you found in part (c), determine the effect on the real wage of labor in Ignominia, assuming that it continues to produce both X_1 and X_2. (If you got the price change wrong in part (c), you'll be graded here on how well you analyze whatever price change you found, so be sure to answer this for *some* price change.)

4. [18 points] In the Reciprocal Dumping Model with free trade, assume that the two firms have equal costs of production, while the foreign firm incurs a transport cost on sales to the Home country's market.

   a. (6 points) Compare the following for the two firms in their operations in the domestic market. That is, are they the same or different, and why? And if they are different, which is larger?
      i. The price that they charge on the domestic market.
      ii. The profit that they make per unit of sales.
      iii. The quantity that they sell.

   b. (4 points) If the foreign government were now to pay an export subsidy to the foreign firm, for sales to the domestic market, exactly equal to the size of the transport cost, how would the answers to part (a) be changed?

   c. (8 points) What can you say about the gains and losses to the following due to the foreign export subsidy of part (b)?
      i. The profits of the domestic firm.
      ii. Domestic-country consumers.
      iii. The profits of the foreign firm.
      iv. The foreign country, including both the firm and its government.

5. [12 points] Suppose that Mexico, before the formation of NAFTA, had the option of importing stoves either from the United States at a constant cost of $500, or from Brazil at a constant cost of $400. It had a 30% tariff on all imports of stoves. Under these circumstances, Mexico was importing stoves and also producing stoves in its domestic stove industry, with an upward sloping domestic supply curve.

   a. (2 points) From which country did Mexico import stoves, prior to NAFTA, and why?

   b. (6 points) When NAFTA was formed, Mexico reduced its tariffs on all imports from the United States to zero. How, if at all, should that have changed the each of following? (You need only indicate the direction of change, but explain your reasoning.)
      i. The domestic price of stoves in Mexico?
      ii. The quantity of stoves imported?
      iii. The country from which it imported?
      iv. Production of stoves in Mexico?
      v. Consumption of stoves in Mexico?
      vi. Mexican tariff revenue?

   c. (4 points) Identify "trade creation" and "trade diversion" in this case, and explain how these matter for the welfare of Mexico?