

Economics 462
Quiz 5

November 30, 2006
Professor Parker

Time: 25 minutes.

Suppose a small country can import “food” a world price of \$30. The domestic supply function is:

$$Q_S = 10P - 100$$

The domestic demand function is:

$$Q_D = 1700 - 20P$$

In addition, there is a positive production externality from food production that producers cannot appropriate. Assume that each unit of food produced yields a marginal external social benefit of \$10.

- a) Using a supply and demand diagram, show the free-trade equilibrium for this small country, clearly showing the autarky price, the free-trade price, the quantity-supplied, the quantity-demanded, and the quantity of imports. I need numbers, so you will need to solve first for the autarky equilibrium where $Q_S = Q_D$.
- b) Now suppose the small country’s government imposed a \$10 tariff on imports. Calculate the effect of this tariff on the price, quantity-supplied, quantity-demanded, and imports, and show this on your graph. Calculate the effects on producer surplus, consumer surplus, the government budget, and the external social benefit of the \$10 tariff. Relative to free trade, is the country better or worse off?
- c) Assume instead that the country pays a production subsidy of \$10 per unit of food to domestic food producers. Relative to free trade, calculate the changes in producer surplus, consumer surplus, the government budget, and the external social benefit. Relative to free trade, is the country better or worse off? How about relative to the tariff?
- d) Recalculate and reconsider your answers to (b) and (c), assuming that the tariff and the subsidy were increased to \$20, while the marginal external benefit remained at \$10.