Answers.

1. Home’s demand function for wheat is: D = 100−20P.

Its supply function is: S = 20+20P.

1. Derive and graph Home’s import demand schedule. What would the price of wheat be in the absence of trade? 1.5

Import demand is given by the equation MD(P) = S(P)−D(P) = 80−40P. The absence of trade is the equivalent to import demand being zero, which happens at P = 2.

Now consider Foreign country which has a demand function D\* = 80−20P, and a supply function S\* = 40+20P.

(b) Derive and graph Foreign’s export supply curve and ﬁnd the price of wheat that would prevail in Foreign in the absence of trade. 1.5

Foreign’s export supply curve is given by: XS∗(P) = S∗(P)−D∗(P) =−40+40P. The absence of trade is equivalent to export supply being zero, which occurs at P∗ = 1.

(c) Now allow Foreign and Home to trade with each other, at zero transportation cost. Find and graph the equilibrium under free trade. What is the world price? What is the volume of trade? 2

When they are allowed to trade, there is no distortion in prices so we have a common world price of Pw = P = P∗. In order to ﬁnd equilibrium, we set import demand equal to export supply giving: MD(P) = XS∗(P∗)⇒80−40Pw =−40+40Pw ⇒ Pw = 1.5 At this world price we have MD(1.5) = XS∗(1.5) = 20.

(d) Suppose Home government imposes a speciﬁc tariﬀ of 0.5 on wheat imports. Determine and graph the effects of the tariff on the following: (i) the price of wheat in each country; (ii) the quantity of wheat supplied and demanded in each country; (iii) the volume of trade. 4

The tariﬀ causes a wedge to be placed between prices seen between the two countries, so we now have P = P∗ +5. Setting export supply equal to import demand, we get: MD(P∗ +5) = XS∗(P∗)⇒80−40(P∗ +0.5) =−40+40P∗ ⇒ P∗ = 1.25⇒ P = 1.75. At these prices production in each country is given by the following:

**Table 1: Quantity of Wheat Supplied and Demanded in Each Country.**

**Supply Demand**

**Home (P = 1.75)**  55 65

**Foreign (P∗ = 1.25)** 65 55

The volume of trade is given by: MD(1.75) = XS∗(1.25) = 10

(e) Discuss the effect of the tariff on the welfare of each of the following groups: (i) Home import-competing producers; (ii) Home consumers; (iii) the Home government.

Home import-competing producers are better oﬀ because they have less foreign competition, which means both price and quantity of good produced domestically increases. Home consumers are worse oﬀ because they now have to pay a higher price. The home government beneﬁts in that they now have additional tariﬀ revenue.