Economics 101 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Spring 2020

Quiz #4 with answers

2/27/20 TA/Discussion Section Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_

All quizzes will be graded on a 10 point scale: you will get two points simply by being on time to class and putting your name on the quiz for that day. The remaining eight points are based upon your answers to the quiz questions.

1. Consider the market for bananas in the country of Smallwood. The domestic demand and domestic supply curves in this country can be described by the following equations where P is the price per unit of bananas and Q is the number of units of bananas:

Domestic Demand Curve for Bananas: P = 100 – Q

Domestic Supply Curve for Bananas: P = 20 + Q

The current world price of bananas is $30 per unit of bananas.

a. (2 points) If the market for bananas is closed in Smallwood, what is the equilibrium price of bananas in Smallwood and what is the value of producer surplus in Smallwood? Show how you found your answer to get full credit.

Answer:

To find the closed market equilibrium price set demand equal to supply:

100 – Q = 20 + Q

2Q = 80

Qclosed market = 40 units of bananas

Pclosed market = 100 – Q = 100 – 40 = $60 per unit of bananas

Producer Surplus = PS = (1/2)($60 per unit- $20 per unit)(40 units)= $800

b. (2 points) Suppose the market for bananas in Smallwood is open to trade. Describe in your own words the impact of opening this market to trade: be specific about the numeric values of any imports or exports.

Answer:

If this market opens to trade, then Smallwood will import bananas since the world price of bananas is less than the closed domestic price for bananas: Smallwood will import 60 units of bananas.

To see this: use P = 30 in the supply and demand curves and then compute the difference between the quantity demanded at the price of $30 per unit and the quantity supplied at the price of $30 per unit. Thus:

P = 100 – Qd

30 = 100 – Qd

Qd = 70

P = 20 + Qs

30 = 20 + Qs

Qs = 10

Imports = Qd – Qs = 70 – 10 = 60 units will be imported

c. Suppose that Smallwood opens its banana market to trade while at the same time imposing an import quota of 40 units of bananas. Given this information and holding everything else equal, compute the values for the following (to get full credit you must show how you got your answers):

i. (1 point) The value of consumer surplus with this import quota = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. (1 point) The number of units of bananas produced domestically given this import quota = \_\_\_\_\_\_\_\_\_\_

iii. (2 points) The value of license holder revenue with this import quota = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer:

One has to analyze the impact of this import quota to answer this question:

Qs + import quota = Qd

P – 20 + 40 = 100 – P

2P = 80

P = 40

If the price per unit of bananas is $40 per unit, then:

Qs = P – 20

Qs = 40 – 20 = 20 units of bananas produced domestically given this import quota

(Qd = 100 – P

Qd = 100 – 40 = 60 units of bananas demanded domestically with a price of $40 per unit

This means that the difference between Qd and Qs is the 40 units of bananas that are imported with the import quota.)

CS with the import quota = (1/2)($100 per unit - $40 per unit)(60 units)

CS with the import quota = $1800

License Holder Revenue = ($40 per unit - $30 per unit)(40 units) = $400

i. (1 point) The value of consumer surplus with this import quota = \_\_\_\_\_\_$1800\_\_\_\_\_\_

ii. (1 point) The number of units of bananas produced domestically given this import quota = \_\_20 units\_\_\_\_\_\_\_\_

iii. (2 points) The value of license holder revenue with this import quota = \_\_\_$400\_\_\_\_\_\_\_\_\_\_\_