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

Summer 2013 TA Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

06/05/13 Discussion Section #\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answers to First Midterm Student ID # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Version 1**

**DO NOT BEGIN WORKING UNTIL THE INSTRUCTOR TELLS YOU TO DO SO**

**READ THESE INSTRUCTIONS FIRST.**

You have 75 minutes to complete the exam. The exam consists of **3 problems worth 10 points each,** **10 binary choice worth 2 points** and **20 multiple choice questions worth 2.5 points**. Please accurately and completely provide your **name**, **ID number**, **discussion section number, version number, and TA name** on the scantron sheet and the exam booklet. Answer all questions on the scantron sheet with a #2 pencil

**NO CELL PHONES, CALCULATORS, OR FORMULA SHEETS ARE ALLOWED.**

**PICK THE BEST ANSWER FOR EACH QUESTION.**

**How to fill in the scantron sheet and other information:**

1. Print your last name, first name, and middle initial in the spaces marked "Last Name," "First Name," and "MI." Fill in the corresponding bubbles below.
2. Print your student ID number in the space marked "Identification Number." Fill in the bubbles.
3. Write the number of the discussion section you’ve been attending under "Special Codes" spaces ABC, and fill in the bubbles. You can find the discussion numbers below on this page.
4. Write the version number of your exam booklet under "Special Codes" space D, and fill in the bubble. The version number is on the top of this page.
* **If there is an error on the exam or you do not understand something, make a note on your exam booklet and the issue will be addressed AFTER the examination is complete. No questions regarding the exam can be addressed while the exam is being administered.**
* **When you are finished, please get up quietly and bring your scantron sheet and this exam booklet to the place indicated by the instructors.**

**Binary Choice \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Multiple Choice \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Problems:**

 **Problem 1 \_\_\_\_\_\_\_\_\_\_\_\_\_**

 **Problem 2 \_\_\_\_\_\_\_\_\_\_\_\_\_**

 **Problem 3 \_\_\_\_\_\_\_\_\_\_\_\_\_**

**TOTAL \_\_\_\_\_\_\_\_\_\_\_\_\_**

**I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, agree to neither give nor receive any help on this exam from other students. Furthermore, I understand that use of a calculator on this exam is an academic misconduct violation.**

**Signed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**I. Binary Choice (10 questions worth 2 points each)**

1. You are told that the point (X, Y) = (10, 10) sits on a straight line. Furthermore, given this straight line you know that every time the x-variable increases by 10 units the y-variable decreases by 5 units. The equation for this line is

a. X = 30 – Y

b. X = 30 – 2Y

2. Consider a production possibility frontier (PPF) showing the maximum amount of books and pizzas an economy can produce given their resources, technology, and the time period. This PPF is bowed out from the origin. Let pizzas be measured on the vertical axis. When increasing the number of pizzas produced, we know that the opportunity cost of producing each additional pizza

a. Decreases since the PPF has a negative slope.

b. Increases as you move up the curve increasing the production of pizzas.

3. Susie produces two goods, paintings and bread and she always fully utilizes the resources and technology available to her. Susie recognizes that she faces a tradeoff:

a. The more bread she produces the more she will be motivated to paint.

b. The more bread she produces the fewer paintings she will be able to produce.

4. When a small, closed economy opens to trade

a. Total surplus will decrease if the world price is greater than the domestic price.

b. Producer surplus will increase if the world price is greater than the domestic price.

5. When the price of Coca Cola increases holding everything else constant there will be a

a. Movement along the supply curve for Pepsi.

b. Movement along the demand curve for Pepsi.

6. Suzette’s income increases by 40% and her demand for artichokes increases by 50% while her demand for generic soda increases by 2%. Given this information we know that

a. Artichokes are a normal good and generic soda is an inferior good from Suzette’s perspective.

b. From Suzette’s perspective artichokes and generic soda are both normal goods.

7. Marcel’s production possibility frontier for doughnuts (D) and coffee (C) is given by the equation D = 100 – 2C while Tina’s production possibility frontier for doughnuts and coffee is given by the equation D = 200 – 5C. From this information we know that an acceptable range of trading prices for 10 cups of coffee is

a. Between 20 doughnuts and 50 doughnuts.

b. Between 2 doughnuts and 5 doughnuts.

8. An effective price ceiling in a market will

a. Decrease total surplus relative to the level of total surplus without a market intervention.

b. Increase producer surplus relative to the level of producer surplus without a market intervention.

9. An import quota is effective if the government

a. Sets the import quota at an amount equal to or greater than the level of imports the economy would import if the market was open to trade and there was no import quota.

b. Sets the import quota at an amount less than the level of imports the economy would import if the market was open to trade and there was no import quota.

10. Suppose that the price of an input used in popsicle production decreased while holding everything else constant. With certainty we know that

a. Consumer surplus has increased in this market.

b. Consumer surplus has decreased in this market.

**II. Multiple Choice (20 questions worth 2.5 points each)**

11. Which of the following statements is positive?

a. “All birds in Wisconsin are red.”

b. “It would be best if all birds in Wisconsin were red.”

c. “Red birds in Wisconsin are more common than blackbirds and that is good since red is the best color for birds.”

d. “If you see a red bird you should be happy.”

12. Jason is willing to demand 10 blue marbles when the price of a marble is 10 cents. He is willing to demand 15 marbles when the price of a marble is 5 cents. Jason’s demand for marbles is linear. Suppose that Jason’s income increases and marbles are an inferior good: Jason finds at each price his demand for marbles has changed by 5 marbles. Which of the following equations best represents Jason’s new demand curve for marbles where Q is the quantity of marbles and P is the price per marble?

a. P = 20 – Q

b. P = 15- Q

c. P = 25 – Q

d. P = 20 – 2Q

13. Mary’s score on the first chemistry exam was 84 points out of a possible 100 points. Her score on the second midterm was 44 points out of a possible 60 points. Suppose that both of these exams are equally weighted in the calculation of her final score. Holding everything else constant, we conclude that Mary’s average in the class has

a. risen.

b. stayed constant.

c. fallen.

d. cannot be calculated from the given information.

14. You are given the following information about Paul’s production possibility frontier: each point represents a point on his PPF. Assume that Paul only produces hamburgers and French fries from his available resources, technology and time. Also, assume that Paul’s PPF is linear between each two adjacent production points (e.g., between points A and B the PPF is linear, between points B and C the PPF is linear, etc.)

|  |  |  |
| --- | --- | --- |
| Production Points | Hamburgers | Units of French Fries |
| A | 100 | 0 |
| B | 80 | 5 |
| C | 50 | 10 |
| D | 0 | 15 |

1. The opportunity cost of producing one more unit of French fries if Paul is currently producing at point B is 30 hamburgers.
2. The opportunity cost of producing one more unit of French fries if Paul is currently producing at point C is 10 hamburgers.
3. The opportunity cost of producing one more hamburger if Paul is currently producing at point D is 5 units of French fries.
4. The opportunity cost of producing one more hamburger is smaller if Paul is currently producing at point C than if he is currently producing at point B.

15. The market for apples is initially in equilibrium. Suppose that there is a sudden drop in temperatures and this adversely affects the apple crop for this year. At the same time scientists discover that eating two apples a day significantly reduces the risk of colon cancer. Given this information and holding everything else constant, which of the following statements is true?

a. The equilibrium price and quantity of apples in this market will decrease.

b. The equilibrium price and quantity of apples in this market will increase.

c. The equilibrium price of apples is indeterminate and the equilibrium quantity of apples will increase.

d. The equilibrium price of apples will increase and the equilibrium quantity of apples is indeterminate.

16. Josie’s production possibility frontier is given by the equation P = 100 – 2R where P is units of peanuts and R is units of rice. Josie only produces peanuts and rice. Sam’s production possibility frontier is given by the equation R = 100 – 2P where P is units of peanuts and R is units of rice. Sam only produces peanuts and rice. Which of the following statements is true?

a. The “kink” point on the joint production possibility frontier for these two individuals is (P, R) = (100, 100) and Sam has the comparative advantage in the production of peanuts.

b. The “kink” point on the joint production possibility frontier for these two individuals is (P, R) = (100, 50) and Josie has the comparative advantage in the production of peanuts.

c. The “kink” point on the joint production possibility frontier for these two individuals is (P, R) = (100, 100) and Josie has the comparative advantage in the production of peanuts.

d. The “kink” point on the joint production possibility frontier for these two individuals is (P, R) = (50, 100) and Sam has the comparative advantage in the production of peanuts.

17. It takes Joe four hours to bake a cake and 2 hours to do the laundry. It takes Megan 3 hours to bake a cake and 1.5 hours to do the laundry. Given this information we can conclude that

a. Joe has the comparative advantage in baking cakes and Megan has the comparative advantage in doing laundry.

b. Megan has the comparative advantage in baking cakes and Joe has the comparative advantage in doing laundry.

c. Megan has the comparative advantage in baking cakes and doing laundry.

d. The opportunity cost of baking a cake or doing laundry is the same for Joe and Megan.

18. Which of the following statements is true?

a. No matter what the opportunity cost of production is, it is always beneficial for two people to specialize according to their comparative advantage and trade with one another.

b. Provided that the opportunity cost of production is different between two individuals, it is always beneficial for the two people to specialize according to their comparative advantage and trade with one another.

c. Trade has distributional impacts and that implies that trade, based upon comparative advantage, is always better for one individual than it is for the other individual.

d. Only countries can benefit from specialization according to comparative advantage.

Use the following information to answer the next **THREE** questions.

Suppose that the market for corn in Belgravia, a small closed economy, can be described by the following demand and supply equations where P is the price per unit of corn and Q is units of corn:

Demand: Q = 10,000 – 100P

Supply: Q = 100P – 2,000

19. Suppose that the government decides to implement a price support program in this market. Holding everything else constant, which of the following statements is true?

a. To be effective this price support program must implement a price floor that is greater than $60 per unit of corn.

b. If the price floor implemented is $80 per unit of corn, then the direct cost of this program to the government will be $80,000.

c. If the price floor implemented is $80 per unit of corn, then consumer expenditure on corn will be equal to $160,000.

d. Answers (a) and (b) are both correct.

e. Answers (a) and (c) are both correct.

20. Suppose that the government decides to implement a price support in this market of $80 per unit of corn. Holding everything else constant, which of the following statements is true?

a. Direct consumer expenditure on corn will be equal to $120,000 and total farm revenue will be equal to $480,000.

b. Government purchases of corn, net of storage costs, will cost $320,000 and total farm revenue will be equal to $480,000.

c. Total farm revenue will be equal to $360,000 and direct consumer expenditure on corn will be equal to $120,000.

d. Government purchases of corn, net of storage costs, will cost $120,000 and total farm revenue will be equal to $360,000.

21. Suppose that the government decides to implement a subsidy program in this market instead of the price support of $80 per unit of corn. Given the implementation of this program and holding everything else constant, which of the following statements is true?

a. For the subsidy program to have the same effect on farm revenue as the price support, the subsidy per unit of corn will need to equal $40 per unit of corn.

b. If the subsidy program is designed so that it has the same impact on farm revenues as the price support program, then the direct cost to the government of the price support program is greater than the direct cost to the government of the subsidy program.

c. If the subsidy program is designed so that it has the same impact on farm revenues as the price support program, then consumers will prefer the subsidy program over the price support program since they will be able to consume more corn at a lower price per unit.

d. Answers (a), (b) and (c) are all true answers.

e. Answers (a) and (c) are true.

22. Suppose that the market for widgets has two suppliers and that the **individual** supply curve for each supplier is given by the following equation where P is the price per unit and Q is the quantity of widgets:

P = 10 + Q

The market demand curve for widgets is given by the equation:

P = 500 – Q

Given this information and holding everything else constant, which of the following statements is true?

1. The equilibrium price in this market is less than $255 and the equilibrium quantity is greater than 245 units.
2. The market supply curve is equal to P = 10 + 2Q.
3. The market supply curve will be steeper than the individual firm supply curve.
4. In order to find the market equilibrium price and quantity more information would need to be provided.

23. Suppose the market for gadgets is initially in equilibrium. Suppose that the price of labor, an input used to produce gadgets, increases at the same time that people’s incomes increase. Gadgets are an inferior good. Given this information and holding everything else constant, which of the following statements is true?

a. The demand curve for gadgets as well as the supply curve for gadgets shifts and therefore it is impossible to predict what happens to the equilibrium price and quantity.

b. The demand curve for gadgets shifts to the left and the supply curve for gadgets shifts to the left and the equilibrium price increases while the equilibrium quantity is indeterminate.

c. The demand curve for gadgets shifts to the left and the supply curve for gadgets shifts to the right and the equilibrium price is indeterminate while the equilibrium quantity decreases.

d. In this example the model of supply and demand will not be able to determine with certainty what happens to the equilibrium price in this market.

24. Consider the market for bike helmets. Suppose that the price of webbing, a necessary input in the production of bike helmets, gets more expensive at the same time that the price of labor used to manufacture bike helmets increases. Holding everything else constant, we can conclude that

a. Either the equilibrium price or the equilibrium quantity will be indeterminate in this situation since there are two changes that are occurring in this market simultaneously.

b. The equilibrium price of bike helmets will increase and the equilibrium quantity of bike helmets will decrease.

c. The equilibrium price of bike helmets will decrease and the equilibrium quantity of bike helmets will increase.

d. The equilibrium price of bike helmets will increase and the equilibrium quantity of bike helmets will increase.

Use the following information to answer the next **THREE** questions.

The market for oranges in Slivia, a small closed economy can be characterized by the following domestic demand and domestic supply curves where P is the price per orange and Q is the quantity of oranges.

Domestic Demand: Q = 40- 2P

Domestic Supply: Q = 4P – 20

Suppose that the current world price for oranges is $15 per orange.

25. Suppose the government of Slivia opens this market to trade. Which of the following statements is true?

a. Domestic consumers in Slivia will oppose this governmental decision.

b. This policy decision will result in a deadweight loss.

c. Slivia will import oranges into its market once the government implements this policy.

d. Slivia will find its total surplus diminished in this market once the government implements this policy.

26. Suppose the world price of oranges falls to $6 per orange. The government of Slivia opens this market to trade and simultaneously implements a tariff of $2 per orange. Given this information, and holding everything else constant, which of the following statements is true?

a. Imports will decrease from 24 units with an open market to 12 units with a tariff.

b. The deadweight loss due to the tariff resulting in less efficient producers producing oranges is equal to $8.

c. The deadweight loss due to the tariff resulting in consumers consuming fewer oranges than they would if the market were simply open to trade is equal to $4.

d. Answers (a), (b) and (c) are all correct answers.

e. Answers (a) and (c) are correct.

27. Suppose the world price of oranges falls to $6 per orange. The government of Slivia opens this market to trade and simultaneously implements a quota that is equivalent in its impact to a tariff of $2 per orange. Given this information, and holding everything else constant, which of the following statements is true?

a. The import quota is set at 24 oranges.

b. The import quota is set at 12 oranges.

c. The import quota is set at 8 oranges.

d. The import quota is set at 16 oranges.

28. New London, a large metropolis, decides to limit the number of taxi cabs that serve the area in order to insure that all cabs are clean, safe, and well maintained. Once the government implements this policy and the policy is effective, then

a. People who wish to ride in cabs will find that it is easy to locate a clean, safe, and well maintained cab within the metropolis.

b. The supply of cabs will likely exceed the demand for cabs.

c. In the market for taxi rides in New London there will be a deadweight loss due to this policy.

d. The market will automatically attract more taxis in response to this policy.

29. Suppose that the demand for a product is linear. Furthermore, you are told that when people’s incomes increase the demand for this product is doubled at every price. From this information you can conclude

a. That this product is a normal good.

b. That the new demand curve is linear and the absolute value of the slope of this new demand curve is smaller than the absolute value of the slope of the original demand curve.

c. That the new demand curve is linear and the absolute value of the slope of this new demand curve is equal to the absolute value of the slope of the original demand curve.

d. Answers (a) and (b) are both correct.

e. Answers (a) and (c) are both correct.

30. Consider the market for jam that is initially in equilibrium. Fred and Mary are the only two consumers of jam in their economy. You are told that the price of apples, an ingredient in jam, increases while at the same time the price of labor used to produce jam decreases. From this information you can conclude that

a. The equilibrium price and quantity of jam increase relative to their initial levels.

b. The equilibrium price and quantity of jam decrease relative to their initial levels.

c. The equilibrium price of jam increases while the equilibrium quantity of jam decreases relative to their initial levels.

d. The equilibrium price of jam and the equilibrium quantity of jam may increase, decrease, or remain the same relative to their initial levels.

**III. Problems (3 problems worth 10 points each)**

1. Consider the market for cupcakes in Littleville. In this market there are three consumers and their individual demand curves are given below where P is the price per cupcake and Q is the quantity of cupcakes:

Bill’s demand for cupcakes: P = 10 – 2Q

Carolyn’s demand for cupcakes: P = 8 – 2Q

Mark’s demand for cupcakes: P = 8 – Q

The market supply curve for cupcakes is given by the equation:

Market Supply: P = (3/2) + (1/12)Q

1. (4 points) In the space below draw four graphs horizontally aligned with one another. In the first graph draw Bill’s demand curve, in the second graph draw Carolyn’s demand curve, in the third graph draw Mark’s demand curve, and in the fourth graph draw the market demand curve. Label each graph completely for full credit. Label all axes, all “kink” points, and all intercepts.

Answer:



1. (2 points) Write the equation(s) for the demand curve and provide the price range if needed for each demand curve. Show your work for full credit.

Answer:

For 0≤P≤8, demand is

P = (-8/16)Q + b

8 = (-8/16)(1) + b

8.5 = b

P = 8.5 – (1/2)Q

For P≥8, demand is

P = 10 – 2Q

1. (3 points) [Hint: the numbers are a bit of a challenge-but, they are doable without a calculator! Be brave. Note answers will not be whole numbers.] Show your work for full credit in answering this problem. Given the above information, when this market is in equilibrium, how many units will
2. Bill consume? Q for Bill = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Carolyn consume? Q for Carolyn = \_\_\_\_\_\_\_\_\_\_\_
4. Mark consume” Q for Mark = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer:

First find the equilibrium price and quantity for the market:

3/2 + (1/12)Q = 8.5 – (1/2)Q

(1/2)Q + (1/12)Q = 7

(7/12)Q = 7

Q = (7\*12)/7 = 12

P = (3/2) + (1/12)Q = (3/2) + (1/12)(12) = $2.50

Or, P = 8.5 – (1/2)(12) = $2.50

We can find the number of cupcakes that Bill will consume by substituting in the equilibrium P into his demand curve: 2.5 = 10 – 2Q and Q for Bill = 3.75 units of cupcakes.

We can find the number of cupcakes that Carolyn will consume by substituting in the equilibrium P into her demand curve: 2.5 = 8 – 2Q and Q for Carolyn = 2.75 units of cupcakes.

We can find the number of cupcakes that Mark will consume by substituting in the equilibrium P into his demand curve: 2.5 = 8 – Q and Q for Mark = 5.5 units of cupcakes.

Note that the sum of 3.75 cupcakes + 2.75 cupcakes + 5.5 cupcakes = 12 cupcakes, the market equilibrium quantity.

1. Bill consume? Q for Bill = \_\_\_\_3.75 cupcakes\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Carolyn consume? Q for Carolyn = \_\_\_\_2.75 cupcakes\_\_\_\_\_\_\_
3. Mark consume” Q for Mark = \_\_\_\_\_\_5.5 cupcakes\_\_\_\_\_\_\_\_\_
4. (1 point)What is the value of producer surplus in this market when the market is in equilibrium? Show how you found this value.

Answer:

PS = 1/2 bh

PS = (1/2)($2.5 per cupcake - $1.5 per cupcake)(12 cupcakes)

PS = $6

2. Use the following information to answer this next set of questions. Joe and Martha produce windows (W) and doors (D). Both Joe and Martha have the same amount of resources available to produce windows and doors and they both have linear production possibility frontiers. The following table provides you with the amount of labor that Joe and Martha need in order to produce windows and doors. Assume that labor is the only input used to produce either of these products.

|  |  |  |
| --- | --- | --- |
|  | Number of Hours Necessary to Produce One Window | Number of Hours Necessary to Produce One Door |
| Joe | 4 hours of labor | 6 hours of labor |
| Martha | 2 hours of labor | 2 hours of labor |

a. (2 points) Suppose Joe has sixty hours of labor available to produce windows and doors. Write an equation for Joe’s production possibility frontier for these two goods based on the above information. Write this equation in slope intercept form and measure windows (W) as the y-variable. Provide a verbal explanation of how you derived this equation in order to get full credit for your answer.

Answer:

With 60 hours of labor, Joe can produce 15 windows or 10 doors. In order to write the equation you might find it helpful to draw a sketch of Joe’s PPF: this sketch would show the y-intercept is 15 and the x-intercept is 10 for this straight line. Thus, the slope of this line is -15/10 or -3/2. We can then write the equation as W = 15 – (3/2)D.

b. (2 points) Suppose both Joe and Martha each have sixty hours of labor available to produce windows and doors. From this information calculate the maximum total number of doors that could be produced by Joe and Martha. Provide a verbal explanation of how you got your answer in order to get full credit.

Answer:

With sixty hours of labor we know that Joe can produce a maximum of 60/6 = 10 doors. Martha can produce a maximum of (60 hours of labor)/(2 hours of labor per door) = 30 doors. Together they can therefore produce a maximum of 40 doors.

c. (2 points) Suppose both Joe and Martha each have sixty hours of labor available to produce windows and doors. In the space below construct Joe and Martha’s joint production possibility frontier measuring windows (W) on the vertical axis and doors (D) on the horizontal axis. In your graph label both axis, the intercepts, and the coordinates of any “kink” points.

Answer:



d. (2 points) Suppose both Joe and Martha each have sixty hours of labor available to produce windows and doors. Provide a range of trading prices in terms of windows that will be acceptable to both Joe and Martha for 6 doors. Provide a verbal explanation of how you got your answer to get full credit for your answer.

Answer:

The opportunity cost to Joe of 1 door is (3/2) windows: so, the opportunity cost to Joe of 6 doors is 6(3/2) windows or 9 windows. The opportunity cost to Martha of 1 door is 1 window: so, the opportunity cost to Martha of 6 doors is 6(1)windows or 6 windows. The range of trading prices in terms of windows that will be acceptable to Joe and Martha will be between 6 windows and 9 windows.

e. (2 points) In this problem Martha has the absolute advantage in the production of both doors and windows. Does she also have the comparative advantage in the production of both goods? Explain your answer to get full credit.

Answer:

Martha can absolutely produce more doors and windows than Joe from the same amount of resources. Martha’s opportunity cost of producing doors is lower than Joe’s opportunity cost of producing doors (Martha’s opportunity cost of producing 1 door is 1 window while Joe’s opportunity cost of producing 1 door is (3/2) window): this means that Martha has the comparative advantage in producing doors. In contrast, Joe’s opportunity cost of producing windows is lower than Martha’s opportunity cost of producing windows (Joe’s opportunity cost of producing 1 window is (2/3) door while Martha’s opportunity cost of producing 1 window is 1 door): this means that Joe has the comparative advantage in producing windows. A person or country has the comparative advantage in producing the good if that person or country can produce the good at lower opportunity cost than can another person or country.

3. Use the following information to answer this next set of questions.

Allegra, a small closed economy, produces tires and its domestic demand curve and domestic supply curve for tires are given by the following equations where P is the price per tire and Q is the quantity of tires:

Domestic Demand: Q = 100 – P

Domestic Supply: Q = (-20/3) + (1/3)P

Suppose the world price of tires is currently $41 per tire.

a. (2 points) Given the above information, calculate the value of total surplus in the tire market in Allegra if the market remains closed to trade. In your calculation show all units used.

Answer:

Total surplus = (1/2)($100 per tire - $20 per tire)(20 tires) = $800

b. (2 points) Given the above information, calculate the value of total surplus in the tire market in Allegra if the market opens to trade. In your calculation show all units used.

Answer:

Total surplus with trade = (1/2)($100 per tire - $41 per tire)(59 tires) + (1/2)($41 per tire - $20 per tire)(7 tires) = $1814

c. (2 points) Given the above information, suppose that the government of Allegra opens the tire market to trade but simultaneously imposes a tariff that increases the price of tires in Allegra to $59 per tire. Calculate the deadweight loss that will occur due to the imposition of this trade protection. In your calculation show all units used.

Answer:

DWL = (1/2)($59 per tire - $41 per tire)(13 tires – 7 tires) + (1/2)($59 per tire - $41 per tire)(59 tires – 41 tires) = $216

d. (2 points) Given the above information, suppose that the government of Allegra opens the tire market to trade but opts to impose an import quota that has the same impact as the tariff that was described in (c). What level of import quota would need to be implemented?

Answer:

With the tariff a total of 28 tires are imported. To use an import quota to get the same effect as this tariff you would need to set the import quota to 28 tires.

e. (2 points) Suppose the government of Allegra implements the import quota described in (d). What is the maximum amount per tire the government could charge for the license to import tires into this market? Explain your answer.

Answer:

The import quota would effectively raise the price of tires in Allegra from $41 per tire to $59 per tire. So, the maximum amount per tire the government could charge for the license to import tires into this market, given this import quota, would be $18 per tire.