

**Homework 3**  
**AGEC 3333**  
**Assigned: 1/22/09**  
**Due: 1/27/09**

Name \_\_\_ Answer Key \_\_\_\_\_

*Part A) From the 1/22 Lecture*

- (1) [1 point] The value of purchasing one additional unit is referred to as marginal value.
- (2) [1 point] Total profits equal consumer surplus minus fixed costs.
- (3) [1 point] If profits equal 50 and fixed costs equal 2, what is consumer surplus?  $50 + 2 = 52$ .
- (4) [1 point] As fixed costs rise, the optimal quantity of inputs for a firm to purchase will
- (a) rise
  - (b) neither rise nor fall
  - (c) fall
- (5) [1 point] Suppose the marginal value formula is:  $MV = 500 - 33(Q)$ . If price equals \$200, how many units should be purchased? *Assume fractions of units can be produced.*

$$P=500 - 33(Q^*); 200=500 - 33(Q^*)$$

$$Q^* = (200-500)/(-33) = 9.09$$

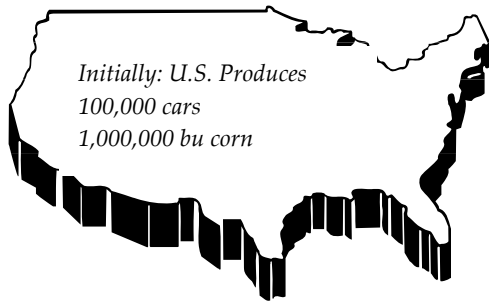
- (6) [1 point] Following from the previous question, if price equals \$200, what is consumer surplus? *Assume fractions of units can be produced.*

$$CS = (1/2)(500-200)(9.09) = 1,363.5$$

- (7) [1 point] The demand curve for a good that is an input into a production process is referred to as a derived demand curve.

Part B) Read Section titled *Creative Destruction* on pages 231-233 of the textbook to answer the following questions.

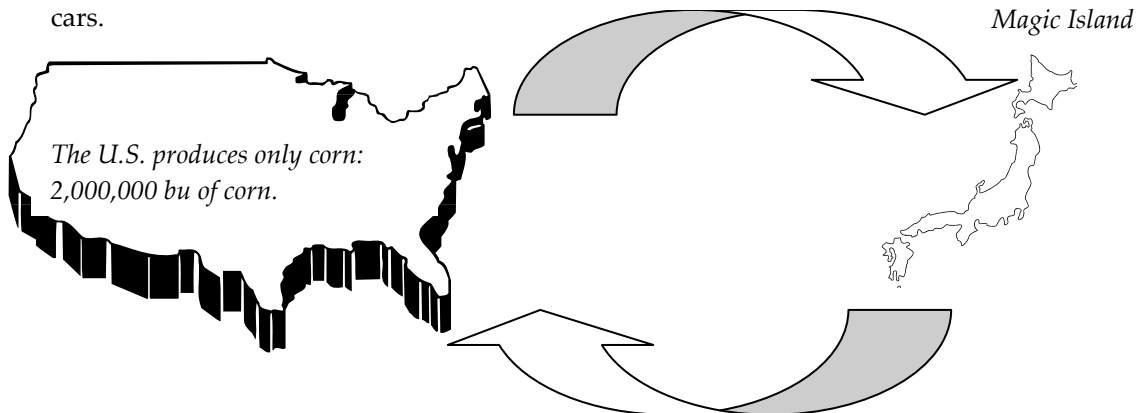
(1) [2 points] Fill in the blanks. In the silly story starting on page 231, America starts out where it is producing 100,00 cars and 1,000,000 bushels of corn. To produce one car, the U.S. has to give up 10 bushels of corn.



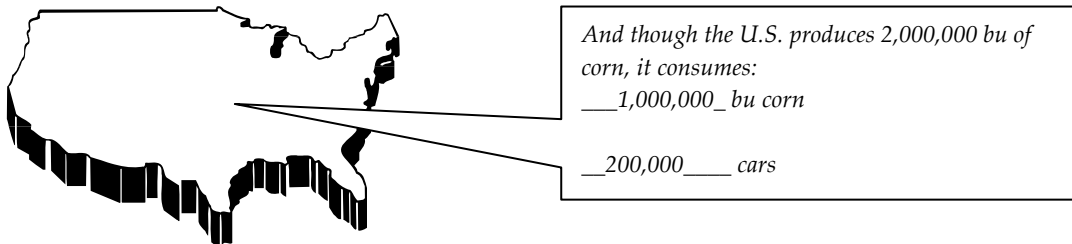
Now the U.S. discovers a “magic island”. If the U.S. ships five bushels of corn to this magic island, a wizard can turn those five bushels into one car. On this magic island, five bushels equals one car. If the U.S. produces only corn, that 100,000 cars it used to produce can now be used to produce  $100,000 \times 10 = 1,000,000$  corn, giving the U.S. a total production of 2,000,000 bushels of corn and no cars.

However, the U.S. wants cars too. So it sends some of its corn to the magic island to be turned into cars.

U.S. ships 1,000,000 bu of this corn to the magic island...



...and the wizard turns that 1,000,000 bushels of corn into 200,000 cars.



By utilizing the magic island, the U.S. is able to consume 100,000 more cars without giving up any corn.

(2) [2 points] This magic island certainly makes the U.S. richer. So why would anyone oppose utilizing the magic island? Describe in 1-3 complete sentences.

Some individuals will have to transition from producing cars to producing corn. In this example, everyone who was once producing cars now must produce corn. This transition can be rough. It involves people losing their jobs in the car factory, searching for new jobs, and moving to a new area where they are needed for corn production. It disrupts families and communities, but after the transition, the economy is much richer. Some individuals will oppose utilizing the magic island because they do not wish to pay the transition cost, and are unaware of the wealth benefits of the transition. Some individuals may not gain as much as it costs them personally, though in aggregate the gains outweigh the costs. The adoption of every technology that improves wealth requires some adjustment like this, and some people opposed to paying the adjustment costs.

(3) [1 point] The process of destroying jobs in one industry to create jobs in another sector, thereby making the country richer, is referred to as creative destruction.

(4) [1 point] That magic island is really Japan, and it was not magic that allowed the U.S. to increase its wealth, it was trade.

(5) [1 point] The U.S. would become richer if we allowed free trade in sugar with other countries. If trade in sugar was liberalized, sugar producers would lose \$1,046 million dollars and sugar consumers would gain \$1,900 million dollars.

(6) [1 point] Why, then, don't we liberalize trade in sugar with other countries, and why do our politicians maintain these trade barriers? *Answer in a few complete sentences.*

The losers from trade liberalization are few in number and the winners are large in number and dispersed. The few losers can more easily mobilize and lobby politicians. Each individual consumer will only save a few cents per week, and are thus unlikely to become active in a cause that affects them, individually, so little. Politicians thrive by taking small amounts of money from lots of consumers and giving that money in large amounts to a few people. Those who pay the cost of trade barriers do not really notice, and those who receive benefits of trade barriers are improved substantially. The politician makes friends and no enemies, so she has every incentive to act as such.

(7) [1 point] Circle the industries you are glad we "destroyed" so that jobs in things like advanced health care, computer programmers, and insurance actuaries could be created.

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