

# Practice Exam One

Name \_\_\_\_\_

## Chapter 1

1. Residents of your city are charged a fixed weekly fee of \$6 for garbage collection. They are allowed to put out as many cans as they wish. The average household disposes of three cans of garbage per week under this plan. Now suppose that your city changes to a “tag” system. Each can of refuse to be collected must have a tag affixed to it. The tags cost \$2 each and are not reusable. What effect do you think the introduction of the tag system will have on the total quantity of garbage collected in your city? Explain briefly.

2. A local restaurant offers an all-you-can-eat lunch buffet for \$5. To celebrate its tenth year in business, the restaurant lets every tenth customer have the buffet for free. This special was not advertised in advance, so all diners arrive expecting to pay the usual price. How, if at all, does economic theory suggest the amount of food consumed by those who pay the \$5 should differ from the amount of food consumed by those who eat for free, if diners behave rationally? Explain briefly.

## Chapter 2

3. Nancy and Bill are auto mechanics. Nancy takes 4 hours to replace a clutch and 2 hours to replace a set of brakes. Bill takes 6 hours to replace a clutch and 2 hours to replace a set of brakes. Determine whether anyone has an absolute advantage at either task and, for each task, determine who has a comparative advantage.

4. Why in college do you have different professors teaching you different subjects, but in elementary school the same teacher taught you everything (or almost everything) all year?

### Chapter 3

5. How would a fall in the price of fertilizer affect the market supply for corn? Does the supply curve shift left or right and why? What will happen to the equilibrium price and quantity?

6. How would an increase in the wage paid to orange pickers affect the market supply for oranges? Does the supply curve shift left or right and why? What will happen to the equilibrium price and quantity of oranges?

7. How would an increase in population affect the market demand for apples? Does the demand curve shift left or right and why? What will happen to the equilibrium price and quantity?

8. How would a decrease in the price of rice (a substitute) affect the market demand for potatoes? Does the demand curve shift left or right and why? What will happen to equilibrium price and quantity of potatoes if, in addition to the decrease in the price of rice, weather conditions are bad for growing potatoes?

#### Chapter 4

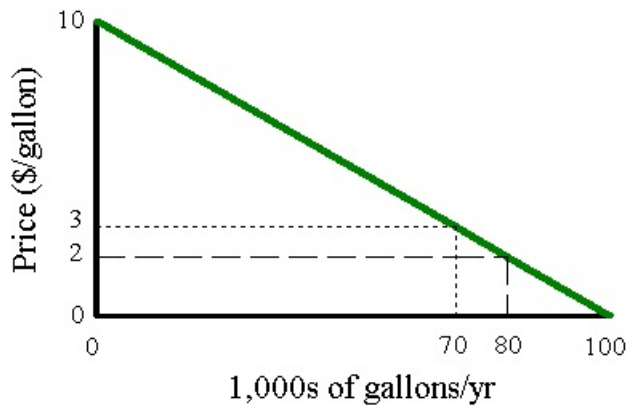
9. Considering what determines the price elasticity of demand, why are students often offered discounts on many items such as movie tickets and airfares?

10. Why are gasoline prices so much more volatile than car prices?

Chapter 5

11. Martha's current marginal utility from consuming orange juice is 75 utils per ounce and her marginal utility from consuming coffee is 50 utils per ounce. If orange juice costs 25 cents per ounce and coffee costs 20 cents per ounce, is Martha maximizing her total utility from the two beverages? If so, explain how you know. If not, how should she rearrange her spending?

12. For the demand curve shown, find the total amount of consumer surplus that results in the gasoline market if gasoline sells for \$2 per gallon. Find the total amount of consumer surplus if gasoline sells for \$3 per gallon and the change in consumer surplus.



On my honor as an Aggie, I have neither given nor received unauthorized aid on this exam.

Signature \_\_\_\_\_

## Practice Exam One

### Chapter 1

1. Residents of your city are charged a fixed weekly fee of \$6 for garbage collection. They are allowed to put out as many cans as they wish. The average household disposes of three cans of garbage per week under this plan. Now suppose that your city changes to a “tag” system. Each can of refuse to be collected must have a tag affixed to it. The tags cost \$2 each and are not reusable. What effect do you think the introduction of the tag system will have on the total quantity of garbage collected in your city? Explain briefly.

*Answer:* In the first case, the cost is \$6/week no matter how many cans you put out, so the cost of disposing of an extra can of garbage is \$0. Under the tag system, the cost of putting out an extra can is \$2, regardless of the number of the cans. Since the marginal cost of each extra can is higher under the tag system, we would expect this system to reduce the number of cans collected.

2. A local restaurant offers an all-you-can-eat lunch buffet for \$5. To celebrate its tenth year in business, the restaurant lets every tenth customer have the buffet for free. This special was not advertised in advance, so all diners arrive expecting to pay the usual price. How, if at all, does economic theory suggest the amount of food consumed by those who pay the \$5 should differ from the amount of food consumed by those who eat for free, if diners behave rationally? Explain briefly.

*Answer:* The amount of food consumed should not differ because the marginal cost of an additional bite of food is zero regardless of whether paid \$5 or not.

### Chapter 2

3. Nancy and Bill are auto mechanics. Nancy takes 4 hours to replace a clutch and 2 hours to replace a set of brakes. Bill takes 6 hours to replace a clutch and 2 hours to replace a set of brakes. Determine whether anyone has an absolute advantage at either task and, for each task, determine who has a comparative advantage.

*Answer:* In time it takes Nancy to replace a set of brakes she can complete one-half of a clutch replacement. So her opportunity cost of replacing a set of brakes is one-half of a clutch replacement. In the time it takes Bill to replace a set of brakes, he can complete one-third of a clutch replacement. So his opportunity cost of replacing a set of brakes is one-third of a clutch replacement. Because Bill’s opportunity cost of replacing a set of brakes is lower than Nancy’s, Bill has a comparative advantage in replacing brakes. That means that Nancy has a comparative advantage in replacing clutches. Nancy also has an absolute advantage over Bill in replacing clutches, since it takes her two hours less than it takes Bill to perform that job. Since each takes the same amount of time to replace a set of brakes, neither person has an absolute advantage in that task.

4. Why in college do you have different professors teaching you different subjects, but in elementary school the same teacher taught you everything (or almost everything) all year?

*Answer:* There is little source for comparative advantage at the elementary school level. Differences in opportunity costs and resulting gains from specialization increase as the level of knowledge becomes more advanced.

### Chapter 3

5. How would a fall in the price of fertilizer affect the market supply for corn? Does the supply curve shift left or right and why? What will happen to the equilibrium price and quantity?

*Answer:* Fertilizer is an input. Lower input prices shift the supply curve to the right (supply increases). Equilibrium price falls and equilibrium quantity rises.

6. How would an increase in the wage paid to orange pickers affect the market supply for oranges? Does the supply curve shift left or right and why? What will happen to the equilibrium price and quantity of oranges?

*Answer:* An increase in the cost of an input used in orange production shifts the supply curve of oranges to the left (supply decreases), resulting in an increase in the equilibrium price and a decline in the equilibrium quantity of oranges.

7. How would an increase in population affect the market demand for apples? Does the demand curve shift left or right and why? What will happen to the equilibrium price and quantity?

*Answer:* An increase in population shifts the demand curve to the right (demand increases). Equilibrium price and quantity both increase.

8. How would a decrease in the price of rice (a substitute) affect the market demand for potatoes? Does the demand curve shift left or right and why? What will happen to equilibrium price and quantity of potatoes if, in addition to the decrease in the price of rice, weather conditions are bad for growing potatoes?

*Answer:* A decrease in the price of a substitute shifts the demand curve to the left (demand for potatoes decreases) because rice becomes a more attractive alternative. Bad weather conditions shift the supply curve to the left (supply decreases). The combined effect is that equilibrium quantity falls and the effect on equilibrium price is unclear (could rise or fall).

## Chapter 4

9. Considering what determines the price elasticity of demand, why are students often offered discounts on many items such as movie tickets and airfares?

*Answer:* Income is a major determinate of demand elasticity. Students typically have lower incomes. Their schedules also might be more flexible.

10. Why are gasoline prices so much more volatile than car prices?

*Answer:* Demand for gasoline is less elastic than demand for cars. It is easier for people to delay purchasing a new car than to put off filling up their gas tank. Also, supply shifts are larger and more frequent for gasoline than for cars. Supplies of crude oil are far more volatile than supplies of the various inputs into cars, such as steel and labor. Wars, hurricanes, and OPEC cause shocks in the supply of crude oil and refining into gasoline.

## Chapter 5

11. Martha's current marginal utility from consuming orange juice is 75 utils per ounce and her marginal utility from consuming coffee is 50 utils per ounce. If orange juice costs 25 cents per ounce and coffee costs 20 cents per ounce, is Martha maximizing her total utility from the two beverages? If so, explain how you know. If not, how should she rearrange her spending?

*Answer:* Martha is currently receiving  $(75 \text{ utils/ounce})/(\$0.25/\text{ounce}) = 300$  utils per dollar from her last dollar spent on orange juice, but only  $(50 \text{ utils/ounce})/(\$0.20/\text{ounce}) = 250$  utils per dollar from her last dollar spent on coffee. Since the two are not equal, she is not maximizing her utility. She should spend more on orange juice and less on coffee.

12. For the demand curve shown, find the total amount of consumer surplus that results in the gasoline market if gasoline sells for \$2 per gallon. Find the total amount of consumer surplus if gasoline sells for \$3 per gallon and the change in consumer surplus.

*Answer:* If gasoline sells for \$2 per gallon, consumer surplus is  $(1/2)(80,000 \text{ gal/yr})(\$8/\text{gal}) = \$320,000/\text{yr}$ . If gasoline sells for \$3 per gallon, consumer surplus is  $(1/2)(70,000 \text{ gal/yr})(\$7/\text{gal}) = \$245,000/\text{yr}$ . Consumer surplus has fallen by \$75,000/yr.

