Liberty High School

AP Macroeconomics

Mr. Lopez

Chapter Five

Elasticity and Its Application

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_\_

Part 1 – Key Terms

1. Elasticity:
2. Elastic
3. Inelastic:
4. Total Revenue:
5. Prince elasticity of demand:
6. Income elasticity of demand:
7. Normal Good:
8. Inferior Good:
9. Price Elasticity of Supply:
10. Cross Price elasticity of demand:

Part 2 – Problems and short answers

1. For each pair of goods listed below, which good would you expect to have more elastic demand and why?
   1. Cigarettes OR a trip to Florida over Spring Break
   2. An aids vaccine over the next month , an aids vaccine over the next five years
   3. Beer in general, Budweiser
   4. Insuline, Asprine
2. Suppose the Daily Newspaper estimates that it raises the price of its newspaper from $1.00 to $1.50 then the number of subscribers will fall from 50,000 to 40,000.
   1. What is the price elasticity of demand for the Daily Newspaper when elasticity is calculated using the midpoint method?
   2. What is the advantage of using the midpoint method?
   3. If the Daily Newspaper’s only concern is to maximize total revenue, should it raise the price of a newspaper from $1.00 to $1.50? Why or why not?
3. The table below provides the demand schedule for motel rooms at Small Town Motel. Use the information provided to complete the table. Answer the questions that follow the table based on your responses in the table. Use the midpoint method to calculate the percentage changes used to generate the elasticities.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Price** | **Quantity Demanded** | **Total Revenue** | **% Change in Price** | **% Change in quantity** | **Elasticity** |
| $20 | 24 |  |  |  |  |
| 40 | 20 |  |  |  |  |
| 60 | 16 |  |  |  |  |
| 80 | 12 |  |  |  |  |
| 100 | 8 |  |  |  |  |
| 120 | 4 |  |  |  |  |

1. Over what range of prices is the demand for motel rooms elastic? To maximize revenue, should Small Town Motel raise or lower the price within this range?
2. Over what range of prices is the demand for motel rooms inelastic? To maximize total revenue, should Small Town Motel raise or lower the price within this range?
3. Over what range of prices is the demand for motel rooms unit elastic? To maximize total revenue, should small Town Motel raise or lower the price within this range?
4. The demand schedule below includes information from the schedule in question 13 along with information on when the consumer incomes increase to $60,000 from $50,000. Use this information to answer the questions that follow the table. Use the midpoint method to calculate the percentage changes used to generate the elasticities.

|  |  |  |
| --- | --- | --- |
| **Price** | **Quantity Demanded When Income is $50,000** | **Quantity Demanded When Income is $60,000** |
| $20 | 24 | 34 |
| 40 | 20 | 30 |
| 60 | 16 | 26 |
| 80 | 12 | 22 |
| 100 | 8 | 18 |
| 120 | 4 | 14 |

1. What is the income elasticity of demand when motel rooms rent for $40.00?
2. What is the income elasticity of demand when motel rooms rent for $100?
3. Are motel rooms normal or inferior goods? Why?
4. Are motel rooms likely to be necessities or luxuries? Why?

15. For each pair of goods listed below, which good would you expect to have the more elastic supply and Why?

a. Television OR beachfront property

b. Crude oil over the next week OR crude over the next year.

1. A painting by van Gogh OR A print of the same painting by van Gogh

16. What are the four main determinants of the price elasticity of demand?

17. If demand is inelastic, will an increase in price raise or lower total revenue? Why or why not?

18. If the price of soda doubles from $1.00 to $2.00 per can and you buy the same amount, what is your price elasticity of demand for soda and is it considered elastic or inelastic?

19. If the price of Pepsi increases by one cent and this induces you to stop buying Pepsi altogether and switch to Coca Cola, what is your price elasticity of demand for Pepsi and is it considered elastic or inelastic?

20. Suppose your income rises by 20 percent and your quantity demanded of eggs falls by 10%. What is the value of your income elasticity of demand for eggs? Are eggs normal or inferior to you?

21. Suppose a firm is operating at half capacity. Is its supply curve for output likely to be relatively elastic or inelastic? Why?

22. Is the price elasticity of supply for fresh fish likely to be elastic or inelastic when measured over the time period of one day? Why?

23. If a demand curve is linear, is the elasticity constant along the demand curve? Which part tends to be elastic and which part tends to be inelastic? Why?

24. Suppose that at a price of $2.00 per bushel, the quantity supplied of corn is 25 million metric tons. At a price of $3.00 per bushel, the quantity supplied is 30 million metric tons. What is the elasticity of supply for corn? Is supply elastic or inelastic? Why?

25. Suppose that when the price of apples rises by 20 percent, the quantity demanded of oranges rises by 6 percent. What is the cross price elasticity of demand between apples and oranges? Are these two goods substitutes or complements?

Part 3 – True or False

1. \_\_\_\_\_\_\_ If the quantity demanded of a good is sensitive to a change in the price of that good, demand is said to be price elastic.

27.\_\_\_\_\_\_\_ Using the midpoint method to calculate elasticity, if an increase in the price of pencils from 10 cents to 20 cents reduces the quantity demanded from 1,000 pencils to 500 pencils, then the demand for pencils is unit price elastic.

28.\_\_\_\_\_\_\_The demand for tires should be more inelastic than the demand for Goodyear brand tires.

29\_\_\_\_\_\_\_The demand for aspirin this month should be more elastic than the demand for aspirin this year.

30\_\_\_\_\_\_\_The price elasticity of demand is defined as the percentage change in the price of that good divided by the percentage change in quantity demanded of that good.

31\_\_\_\_\_\_\_If the cross price elasticity of demand between two goods is positive, the goods are likely to be compliments.

32\_\_\_\_\_\_\_If the demand for a good is price inelastic, an increase in its price will increase total revenue in that market.

33\_\_\_\_\_\_\_The demand for a necessity such as insulin tends to be elastic.

34\_\_\_\_\_\_\_ If the demand curve is linear, the price elasticity of demand is constant along it.

35\_\_\_\_\_\_\_If the income elasticity of demand for a bus ride is negative, then a bus ride is an inferior good.

36\_\_\_\_\_\_\_The supply of automobiles for this week is likely to be more price inelastic than the supply of automobiles this year.

37\_\_\_\_\_\_\_ If the price elasticity of supply for blue years is 1.3, an increase of 10 percent in the price of blue jeans would increase the quantity supplied of blue jeans by 13 percent.

38\_\_\_\_\_\_\_ The price elasticity of supply tends to be more inelastic as the firm’s production facility reaches maximum capacity.

39\_\_\_\_\_\_\_An advance in technology that shifts the market supply curve to the right always increases total revenue received by producers.

40\_\_\_\_\_\_\_the income elasticity of demand for luxury items, such as diamonds, tends to be large. (Greater than 1).

Part 4 – Additional Critical Thinking

In order to reduce teen smoking, the government places a $2.00 per pack tax on cigarettes. After one month, while the price to the consumer has increased a great deal, the quantity demanded of cigarettes has reduced only slightly.

1. Is the demand for cigarettes over the period of one month elastic or inelastic?
2. Suppose you are in charge of pricing for a tobacco firm. The president of your firm suggests that the evidence received over the last month demonstrates that the cigarette industry should get together and raise the price of cigarettes further because total revenue to the tobacco industry will certainly rise. Is the president of your firm correct? Why?
3. As an alternative, suppose the president of your firm suggests that your firm raise the price of your cigarettes independent of the other tobacco firms because the evidence clearly shows that smokers are insensitive to changes in the price of cigarettes. Is the president of your firm correct if it is his desire to maximize total revenue? Why or why not?