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Department of Economics
Economics 201
Fall 2023

Homework #2 (due by 9:00pm on Friday, September 15)

*Please submit your answers to this homework through the Assignment link at Blackboard. **No credit will be given for answers submitted in class or emailed to the professor, regardless of the excuse.** This includes unique excuses like the police confiscated my computer right before I was going to submit it, excuses like “I lost my Internet”, etc. Please note that all submissions are final, again – regardless of the excuse (which includes “I accidentally hit the submit button”). Note that Blackboard allows you to save your answers, but you must hit the “Save and Submit” button to submit your answers. If you are unfamiliar with Blackboard, then it would be a good idea to visit the class page at Blackboard and check out the homework assignments as they are posted.*

Please note that when Blackboard grades homework answers, more specifically – answers to the fill-in-the-blank questions – your answer must match exactly with the answer that Blackboard is looking for. Below, you’ll find some instructions on how to properly format these answers. Reading this section is strongly recommended.

Homework Questions 7, 10a and 10b

Formatting matters with the answers in these questions. For this reason, **understand that your answer can be technically correct but graded as wrong because you didn't follow the directions provided below.** Given that formatting is considered part of your answer, a wrongly formatted answer is still a wrong answer.

Please note the following comments regarding formatting below.

(i) Round your answer in Question #7 (i.e. 7a-7c) to the nearest tenth (e.g. round 3.46 to 3.5).

(ii) Your answer in question 10a should be expressed as a whole number. If you do get a fractional answer, round that answer to the nearest one unit. E.g., if your answer is 25.1, then record your answer as 25.

(iii) Your answer in question 10b may be expressed in terms of dollars or as a whole number, with or without the dollar sign. E.g., if your answer is 100, then record your answer as \$100 or 100, but not 100.0 or \$100.00.

Homework #2 Questions

1. Consider the Metro Louisville area market for oil change (i.e. oil changes for automobiles provided by a firm in different areas of Louisville or Jefferson County). Assume that this market consists of many demanders and suppliers within the city of Louisville. Note that consumers can also purchase an oil change in areas outside of Louisville, e.g. Oldham County, instead of what we consider Metro Louisville. Assume as well that an oil change is considered a normal good and necessity, and that a substitute for buying an oil change would be for consumers to perform those oil changes themselves (i.e. not buy their oil change service from a firm, but rather, buy the oil themselves and perform the oil change at home).

You must identify how different events affect the oil change market in Louisville by matching each event (listed under “Events” below) to the item which represents the most likely item on the list of effects on the market for Louisville oil changes.

Events (Question Items):

- a. Environmental legislation increases the cost associated with providing oil changes.
- b. Higher income for all households within the Metro Louisville area.
- c. Indiana eliminates the state sales tax on all services, which includes services like oil changes.
- d. Metro Louisville passes a Living Wage law that raises the wage of unskilled workers within all Louisville area businesses, including those employed at firms who provide oil changes.
- e. Technological change within firms who provide oil changes allows these firms to provide those services more efficiently.

Effect on Louisville Market for Oil Changes (Answer Items):

- A. Increase in Demand for oil changes
- B. Decrease in Demand for oil changes
- C. Increase in Supply of oil changes
- D. Decrease in Supply of oil changes
- E. Increase in the Demand for oil changes and Increase in the Supply of oil changes
- F. Decrease in the Demand for oil changes and Decrease in the Supply of oil changes
- G. Increase in the Demand for oil changes and Decrease in the Supply of oil changes
- H. Decrease in the Demand for oil changes and Increase in the Supply of oil changes

2. Consider the Metro Louisville area market for coffee shops (e.g. Starbucks). Again, note that Metro Louisville includes all firms within Jefferson County and the city of Louisville. You need to identify how different events affect the equilibrium price and equilibrium quantity of coffee sold in the Louisville coffee shop market by matching each event (listed under “Events” below) to the item which represents the most likely effect on the market’s equilibrium price and quantity. Note that each change in equilibrium price and quantity is the result of a shift(s) in the demand and/or supply curves associated with this market.

Events (Question Items):

- a. Successful marketing campaigns by coffee shop firms convince more consumers to patronize coffee shops in the Metro Louisville area.
- b. Kentucky State government lowers the commodity tax placed on all suppliers within the State.
- c. Falling gasoline prices decrease the distribution cost associated with transporting coffee and other items to coffee shops in the Metro Louisville area.
- d. Price competition amongst coffee shops in counties outside of, but adjacent to Jefferson County (e.g. Oldham and Bullitt County) lower the price of their coffee.
- e. Legislation in Metro Louisville leads to higher leases/rent for all area coffee shop firms.

Effect on equilibrium within the Louisville Coffee Shop Market (Answer Items):

- A. Increase in both the equilibrium price and equilibrium quantity
- B. Decrease in both the equilibrium price and equilibrium quantity
- C. Increase in the equilibrium price, and decrease in the equilibrium quantity
- D. Decrease in the equilibrium price, and increase in the equilibrium quantity

Question 3 relates to how we explain changes in price and quantity on the basis of the demand and supply model from class. Assume that the curves in this market are not horizontal or vertical (i.e. that these curves have their "typical" slope).

3. Match the change in equilibrium on the left with the shift(s) on the right that best explains that change. E.g., suppose you’re given an increase in equilibrium price (P^*) and equilibrium quantity (Q^*). If you believe this change is best explained by a decrease in supply, then your answer would be “decrease in supply” (answer D).

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|--|--|
| a. P^* increases and Q^* increases | A. Increase in demand |
| b. P^* increases and Q^* decreases | B. Decrease in demand |
| c. P^* decreases and Q^* decreases | C. Increase in supply |
| | D. Decrease in supply |
| | E. Increase in demand and increase in supply |
| | F. Decrease in demand and decrease in supply |
| | G. Increase in demand and decrease in supply |
| | H. Decrease in demand and increase in supply |

In Questions #4-5 below, you're provided with some information about the own-price elasticity of good X (Question 4) and income elasticity of good W (Question 5). Based on the information provided in the question, you must indicate every correct interpretation of that information. E.g., if you believe the elasticity in Question 4 can be interpreted as saying good X has an elastic demand and is a normal good, then your answer would be b and c.

4. If a 5% increase in the price of good X leads to a 4% decrease in the quantity demanded of good X, then indicate all of the answers below that represent a correct interpretation of the own-price elasticity associated with this information:

- (a) The own-price elasticity of good X demonstrates that good X has an inelastic demand
- (b) The own-price elasticity of good X demonstrates that good X has an elastic demand
- (c) The own-price elasticity of good X demonstrates that good X is a normal good
- (d) The own-price elasticity of good X demonstrates that good X is an inferior good
- (e) The own-price elasticity of good X demonstrates that good X is a necessity
- (f) The own-price elasticity of good X demonstrates that good X is a luxury

5. If a 4% increase in consumer income leads to a 6% increase in the quantity demanded of good W, then indicate all of the answers below that represent a correct interpretation of the income elasticity associated with this information:

- (a) The income elasticity of good W demonstrates that good W is a substitute
- (b) The income elasticity of good W demonstrates that good W is a complement
- (c) The income elasticity of good W demonstrates that good W is a normal good
- (d) The income elasticity of good W demonstrates that good W is an inferior good
- (e) The income elasticity of good W demonstrates that good W is a necessity
- (f) The income elasticity of good W demonstrates that good W is a luxury

*In the Course Documents section of Blackboard, there's a folder entitled "**Homework #2 material**" that includes a file called "Elasticity tables 1, 2 and 3". You'll be using tables 1, 2 and 3 from this file to answer questions #6-9.*

6. Access **Table 1** on the handout mentioned above and consider each of the elasticities reported within the table. Indicate every answer below that represents a correct interpretation of the elasticity measures reported within the table (note that multiple answers are at least possible).

- (a) Beef and pork are substitutes
- (b) Beef and poultry are substitutes
- (c) Beef and pork are complements
- (d) Beef and poultry are complements
- (e) Beef and pork are normal goods
- (f) Beef and poultry are normal goods

7. Access **Table 1** on the handout mentioned above, and assume that there is a 5% decrease in the price of beef, pork and poultry. In this situation, you'll use **Table 1** to determine how the quantity demanded of each type of meat responds to that price decrease.

a. Based on the information in Table 1, if the price of beef decreases by 5%, then the quantity of beef purchased by households will increase by _____%

b. Based on the information in Table 1, if the price of pork decreases by 5%, then the quantity of pork purchased by households will increase by _____%

c. Based on the information in Table 1, if the price of poultry decreases by 5%, then the quantity of poultry purchased by households will increase by _____%

8. Access **Table 2** on the handout mentioned above, and assume there is a 5% decrease in the price of all soft drinks. Based on the information provided within **Table 2** indicate every **true statement** below regarding how this price change affects the total revenue associated with selling these two different types of soft drink. Note that multiple answers are possible here

- (a) If the price of diet soft drinks decreases, then there will be an increase in the total revenue earned from selling diet soft drinks
- (b) If the price of diet soft drinks decreases, then there will be a decrease in the total revenue earned from selling diet soft drinks
- (c) If the price of regular soft drinks decreases, then there will be an increase in the total revenue earned from selling regular soft drinks
- (d) If the price of regular soft drinks decreases, then there will be a decrease in the total revenue earned from selling regular soft drinks

9. **Table 3** reports the income elasticities for different food groups within the African country of Zimbabwe. The income elasticities in the table are calculated for households within the lowest 20% and the richest 20% of the country's income distribution. We'll refer to those categories below as poor and rich respectively.

Based on the information provided within **Table 3** indicate every **true statement** below regarding how the poor and rich within this country view different goods. Note that multiple answers are possible here.

- (a) Cereals and vegetables are considered normal goods by both poor and rich alike
- (b) Cereals and vegetables are considered luxury goods by both poor and rich alike
- (c) Cereals and vegetables are considered necessities by both the poor and rich alike
- (d) Cereals and vegetables are considered necessities by the poor, but luxury goods by the rich
- (e) Cereals and vegetables are considered luxury goods by the poor, but necessities by the rich

10. Assume that the demand and supply curves for good A are given as the equations you see below. *Note: please read the instructions above about rounding your answers.*

$$\begin{array}{ll} \text{Demand: } & P = 500 - 4Q_d \quad (Q_d = \text{quantity of A demanded, } P = \text{price}) \\ \text{Supply: } & P = 100 + 1Q_s \quad (Q_s = \text{quantity of A supplied}) \end{array}$$

a. The equilibrium quantity in this market is _____
(express your answer as a number – e.g., if the answer is 25 units, then record your answer as 25. I.e., do not write the word “units” after your answer or record an answer like 25.0)

b. The equilibrium price in this market is _____
(express your answer in terms of dollars, with or without the dollar sign – e.g., if your answer is 25, then record your answer as \$25 or 25, but not as 25.0 or \$25.00, etc.)

11. Assume that the demand and supply curves for good A are given as the equations you see below. *Note: these are the same equations from Question #11 above.*

$$\begin{array}{ll} \text{Demand: } & P = 500 - 4Q_d \quad (Q_d = \text{quantity of A demanded, } P = \text{price}) \\ \text{Supply: } & P = 100 + Q_s \quad (Q_s = \text{quantity of A supplied}) \end{array}$$

Assume that government has placed a price ceiling on the market for good A. If the price ceiling is set at \$120, then which one of the following (direct) effects is the most likely to occur:

- (a) Shortage of 95 units
- (b) Surplus of 95 units
- (c) Shortage of 75 units
- (d) Surplus of 75 units
- (e) Shortage of 60 units
- (f) Surplus of 60 units
- (g) Shortage of 15 units
- (h) Surplus of 15 units
- (i) None of the above