COURSE:	**PRINCIPLES OF MICROECONOMICS**
COURSE CODE:	**PMI511S**
TUTORIAL LETTER:	**01/2023**
DATE:	**April 2023**

Dear Student

Thank you for submitting your first assignment on time. It was our pleasure to mark it. If your marks are good, I hope this will motivate you to work even harder. If you are disappointed with your marks, please do not give up now. Remember you still have one assignment to try and make up for this.

At the same time, we would like to remind you that by doing your assignment on your own, and not copying it from another will only be to your benefit in the coming exams.

Remember to read thoroughly through the questions before answering, especially the multiple-choice questions. Always try to answer as completely as possible, provide all the facts. Don't simply write down the answer, but show all your calculations. Avoid making unnecessary calculation mistakes and always write down the initial formula for any calculation.

Use this opportunity to revise the questions in Assignment 1 with the memorandum in hand. Give attention to the remarks of the marker-tutor in your assignment answer sheet. If there is anything that you are still unsure of, do not hesitate to contact a market-tutor.

We are looking forward to your next assignment.

Regards,

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Principles of Microeconomics PMI511S 2023

ASSIGNMENT 1

1. Free mark
2. d
3. c
4. d
5. c
6. a
7. b
8. c
9. b
10. d
11. a
12. b
13. c
14. d
15. a
16. b
17. d
18. a
19. d
20. c

Section B

QUESTION 1 [10 marks]

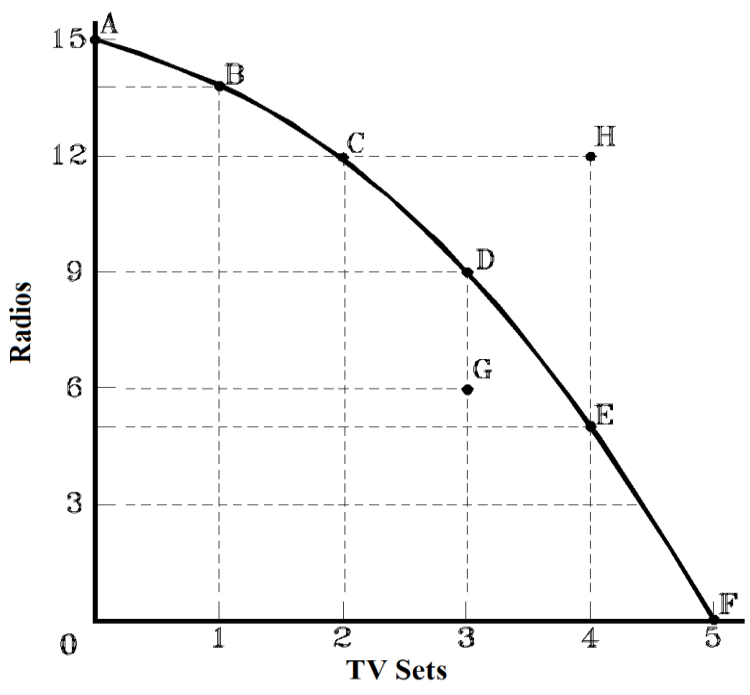
Johnson Electronics is a small company specialising in manufacturing radios and TV sets. Table 1 represents a hypothetical production possibilities schedule for Johnson Electronics. The company has limited resources and fixed production techniques.

Table 1 Production possibilities for radios and TV sets

Possibility	Radios	TV sets
Combination A	15	0
Combination B	14	1
Combination C	12	2
Combination D	9	3
Combination E	5	4
Combination F	0	5

(a) **Plot and label points A to F on a graph, with radio production on the Y-axis and TV production on the X-axis. Join the points to form the production possibilities curve for radios and TV sets. (3)**

Figure 1 Production possibilities curve for radios and TV sets



(3 Marks for graph)

Please make sure that the measurements on the Y-axis are correct.

(b) Now plot and label points G and H on your graph.

Possibility	Radios	TV Sets
G	**6**	**3**
H	**12**	**4**

Points G and H are also shown on Figure 1 under (a).

(2)

(c) Which of points A to H is the least desirable point to be at? Provide a reason for your answer.

Point G: This point falls inside the PPC and it represents inefficient production and not all the resources are being used. At any point on the PPC all resources are being used.

(1)

(d) Which of points A to H is the most desirable point to be at? Assuming that the PPC does not change, is Johnson Electronics able to reach this point?

Point H is best because it represents the largest combination of the two products, but it is unattainable because it falls outside the PPC, in other words Johnson Electronics does not have enough resources to produce that combination of radios and TV sets. **(1)**

(e) When moving from points B to C, Johnson Electronics increases TV set production from 1 to 2 units. What is the opportunity cost of this increase in TV set production?

The opportunity cost is 2 radios (14 – 12) **(1)**

(f) What would be the opportunity cost of producing 3 additional radios if Johnson Electronics were currently producing 6 radios and 3 TV sets? Provide a reason for your answer.

Opportunity cost is zero. Since point G represents inefficient production, more radios can be produced without giving up any TV sets. Any movement from a point inside the PPC to a point on the PPC will incur no opportunity cost. **(2)**

QUESTION 2 [10 marks]

Table 2 Demand schedule for sugar

Price **N$ per kilogram**	**Quantity demanded** **Millions kilograms per year**
5	**25**
10	**20**
15	**15**
20	**10**
25	**5**

2.1 Refer to Table 2 above. Suppose the price of sugar rises from N$5 to N$15 per kilogram:

(a) Calculate the price elasticity of demand for sugar using the arc (midpoint) elasticity formula.

$$Ed = \frac{\frac{\Delta Q}{(Q_1 + Q_2)}}{\frac{\Delta P}{(P_1 + P_2)}}$$

$$= \frac{\frac{10}{(25 + 15)}}{\frac{10}{10}}$$

(5 + 15)

10

40

= ----

10

20

= 10 x 20

40 10

= 0.5 (Ed < 1) (2)

(b) What happens to the total revenue in this case? (Use the TR rule to answer this question.)

Demand is inelastic: A price increase will increase total revenue. **(2)**

2.2 Refer to Table 2 above. Suppose the price of sugar rises from N$15 to N$25 per kilogram:

(a) Calculate the price elasticity of demand for sugar using the arc (midpoint) elasticity formula.

$$Ed = \frac{\frac{\Delta Q}{(Q_1 + Q_2)}}{\frac{\Delta P}{(P_1 + P_2)}}$$

10

(15 + 5)

$$= \frac{\text{----------}}{\frac{10}{(15 + 25)}}$$

$$= \frac{\frac{10}{20}}{\frac{10}{40}}$$

$$= \frac{10}{20} \times \frac{40}{10}$$

= 2 (Ed > 1) (2)

(b) What happens to the total revenue in this case? (Use the TR rule to answer this question.)

Demand is elastic. A price increase will decrease total revenue. **(2)**

Please note**: The rule states that if demand is elastic a price decrease will increase total revenue, but in this case the price increases from N$15 to N$25, therefore the total revenue will decrease and not increase. You have to read the question and apply the rule to what the question requires from you.**

2.3 At which price is total revenue at a maximum?

Total revenue:

5 x 25 = 125

10 x 20 = 200

15 x 15 = 225 (highest TR) **(2)**

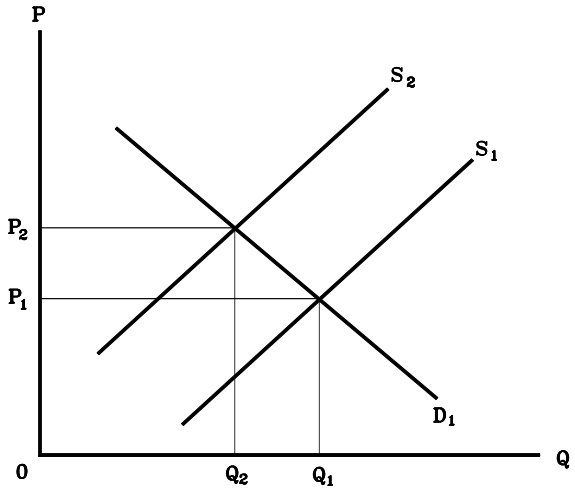
20 x 10 = 200

25 x 5 = 125

QUESTION 3 [5 marks]

b) When there is a drought, the price of wheat increases. (5)

Figure 2 Decrease in supply of wheat



Refer to Figure 2. The market is in equilibrium at price P_1 and quantity Q_1. The demand curve is D_1 and the supply curve S1.

- **A drought will decrease the supply of wheat and shift the supply curve to the left. The new supply curve is S_2.**
- **The <u>equilibrium price will increase</u> from P_1 to P_2 and the <u>equilibrium quantity will decrease from</u> Q_1 to Q_2.**

(3 Marks for graph and 2 marks for explanation)