

Tutorial letter 201/1/2018

Microeconomics

ECS2601

Semester 1

Department of Economics

IMPORTANT INFORMATION:

This tutorial letter contains the answers to
Assignment 01 and Assignment 02.

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Dear Student

Please note the contact details of the lecturer responsible for this module:

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Please **only** direct content-related queries to your lecturers. If you have any other problems with this module, please contact the university administration (see below for details).

Send an e-mail to info@unisa.ac.za or an SMS to 32695 (students in South Africa only – the cost per SMS is R1,00). Alternatively, fax your questions to 012 429 4150.

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ANSWERS TO ASSIGNMENT 01	(Unique number: 766235)

SOLUTIONS TO ASSIGNMENT 01

The first assignment was based on study units 1 to 7.

The correct answers are as follows:

Question

- | | | | |
|--------|---------|---------|---------|
| 1. [3] | 6. [4] | 11. [2] | 16. [1] |
| 2. [4] | 7. [4] | 12. [4] | 17. [1] |
| 3. [1] | 8. [1] | 13. [1] | 18. [2] |
| 4. [2] | 9. [4] | 14. [1] | 19. [2] |
| 5. [3] | 10. [3] | 15. [1] | 20. [2] |

1. **Option 3 is correct.**

First set the demand function equal to the supply function ($Q_d = Q_s$). Then isolate the price ("P" term) on one side of the equation and solve the equation to get the equilibrium price.

$$600 - 30P = -300 + 120P$$

$$900 = 150P$$

$$P_e = 6$$

Now, substitute the price ("P" term) found in step 2 into either the supply or demand function. Solve for equilibrium quantity.

$$Q_e = 600 - 30(6)$$

$$Q_e = 420$$

2. **Option 4 is correct.**

Condition **4** is **not** required. The item traded could be labour, which is used in many examples in the chapter. It could also be something different, such as a currency, or shares in a large company.

3. **Option 1 is correct.**

Statement **1** shows what would be shown on a graph. Statement **2** is incorrect because there will be no excess demand, or indeed an excess supply, at the new equilibrium price. Statements **3** and **4** are incorrect because there will be no excess supply.

4. **Option 2 is correct.**

Step 1:

$$Q_1 = -200 + 10(40)$$

$$= 200$$

$$Q_2 = -200 + 10(50)$$

$$= 300$$

Step 2:

Price elasticity of supply = (% change in Q)/ (% change in P)

$$E_p = \frac{\frac{Q_2 - Q_1}{(Q_1 + Q_2)/2}}{\frac{P_2 - P_1}{(P_1 + P_2)/2}} \quad E_p = \frac{\frac{300 - 200}{(200 + 300)/2}}{\frac{50 - 40}{(40 + 50)/2}}$$

$$= \frac{\left(\frac{2}{5}\right)}{\left(\frac{2}{9}\right)}$$

$$= -\frac{9}{5}$$

$$= 1.8$$

5. Option 3 is correct.

Price elasticity of demand = (% change in Q)/ (% change in P)

$$E_p = \frac{\frac{Q_2 - Q_1}{(Q_1 + Q_2)/2}}{\frac{P_2 - P_1}{(P_1 + P_2)/2}} \quad E_p = \frac{\frac{3000 - 2500}{(2500 + 3000)/2}}{\frac{40 - 50}{(50 + 40)/2}}$$

$$= \frac{\left(\frac{2}{11}\right)}{-\left(\frac{2}{9}\right)}$$

$$= -\frac{9}{11}$$

$$= -0.82$$

6. Option 4 is correct.

Factor 4 would not help to explain this. A normal good is one where demand decreases if incomes increase, but this says nothing about the price elasticity of demand.

7. **Option 4 is correct.**

Option 4 is correct in accordance to the definition of an inferior good, people will consume less as their incomes increase.

8. **Option 1 is correct.**

The axis toward which the slope is steepest will be the most valued good.

9. **Option 4 is correct.**

Factor 4 does not help to explain the shape of indifference curves. Admittedly, this factor arises from factor 2, which does help to explain it: because if one product was considered undesirable, the curves would not slope down to the right at all.

10. **Option 3 is correct.**

This will be a case of increasing marginal utility. Because when an indifference curve is convex from above it, means that the more you have of a good, the more your desire for more of the good will be.

11. **Option 2 is correct.**

The consumer could gain more utility by consuming more A and less B, as in 2. For example, if the consumer consumed half a unit less of B, the consumer's total utility would fall by 80 utils, but the R5 saved would allow the consumer to buy one more unit of A and gain 100 utils.

12. **Option 4 is correct.**

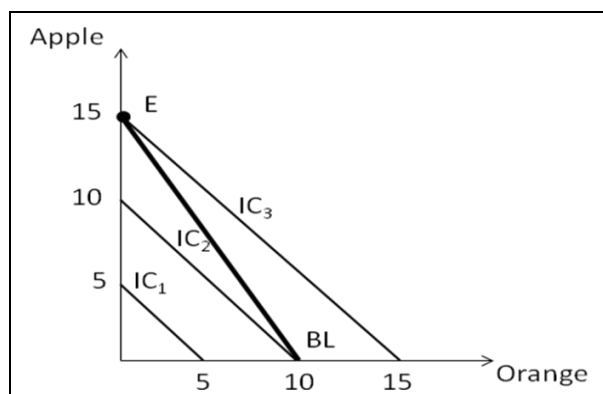


Figure 1.1

Given apples and oranges are perfect substitutes with $MRS = 1$, Lwazi's indifference curves should be straight lines with slopes equal to -1 (as they are downward sloping). Also given his income is R30 per week, the price of apples is R2 each and the price of oranges is R3 each, we can construct the budget line (BL) as shown in figure 1.1. That is, he can either use all his income to buy 15 apples or use all his income to buy 10 oranges. His utility maximisation point will be a corner solution that he uses all his income to buy 15 apples, but no oranges, to get him to IC3.

13. **Option 1 is correct.**

Statement 1 is false. The income effect concerns the way in which a change in price alters a consumer's decisions by altering the consumer's purchasing power.

14. **Option 1 is correct.**

Since the substitution effect rotates around the indifference curve, it must be inversely related. It is not sufficient information to plot an ordinary demand curve because the income effect has not been included.

15. **Option 1 is correct.**

Statement 1 is the correct definition of the law. Statement 2 is false because the returns may initially increase, for example in cases where extra workers can initially exploit the possibilities of teamwork. Statement 3 is false, partly because the returns may initially

increase, and partly because the law of diminishing marginal returns refers to adding extra amounts of a single variable input. Statement 4 is false because the law of diminishing marginal returns refers to adding extra amounts of a single variable input, but although statement 4 is a false definition of the law, and so an incorrect answer to this question, it is in fact a true statement.

16. **Option 1 is correct.**

Statement 1 is false. A rise in the price of a fixed input increases a firm's total costs, even though it cannot alter the quantity of this input that it uses in the short run. As its total cost for each output level increases, the average cost of each output level increases, so its SAC curve shifts upwards.

17. **Option 1 is correct**

The ATC is pulled down by diminishing returns and falling AFC. AVC is not pulled down by the falling AFC, so the effect of diminishing returns is sooner.

18. **Option 2 is correct**

$$TFC = AFC \times Q = R16 \times 25 = R400$$

$$TVC = TC - TFC = R1000 - R400 = R600$$

$$AVC = TVC/Q = R600/25 = R24$$

Alternatively, you could calculate it as follows:

$$ATC = TC/Q = R1000/25 = R40$$

$$AVC = ATC - AFC = R40 - R16 = R24$$

19. **Option 2 is correct.**

$$AFC = TFC/Q = R300/6 = R50$$

$$AVC = ATC - AFC = R200 - R50 = R150$$

20. **Option 2 is correct.**

All points on the long-run average cost curve are the lowest cost points possible for that output even though they may not be low points on the short-run cost curve of the particular example.

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ANSWERS TO ASSIGNMENT 02	(Unique number: 837954)

SOLUTIONS TO ASSIGNMENT 02

The second assignment was based on study units 8 to 12.

The correct answers are as follows:

Question

1. [2]	6. [2]	11. [4]	16. [4]
2. [2]	7. [2]	12. [4]	17. [2]
3. [4]	8. [4]	13. [3]	18. [2]
4. [2]	9. [1]	14. [2]	19. [3]
5. [3]	10. [2]	15. [3]	20. [3]

1. **Option 2 is correct.**

Perfect competition is considered perfect because it leads to optimal efficiency, not because it promotes rivalry, or describes the real world accurately.

2. **Option 2 is correct.**

Statement 2 is false. A price-taker faces a demand curve, which is horizontal at the market price; this curve shows that the firm would sell nothing at all if it set a higher price, and would be swamped with orders if it set a lower price.

3. **Option 4 is correct.**

In the case of perfect competition $P = AR = MR$ and thus the average revenue per unit for 11 units will be R20. $TR = AR \times Q = R20 \times 11 = R220$.

4. **Option 2 is correct.**

Supply will increase because profits attract competitors.

5. **Option 3 is correct.**

See pages 310-312 on producer and consumer surplus in your prescribed textbook. Also, make sure that you can identify the area that represents both the producer and consumer surplus on a supply and demand graph.

6. **Option 2 is correct.**

Consumer surplus is the difference between what a consumer is willing to pay for a product and what he actually pays. In this case, Michael is willing to pay R3 200. What he actually paid is calculated as follows:

$$\begin{aligned} \text{Consumer surplus} &= \text{what you are willing to pay less what you actually pay} \\ 800 &= 3200 - \text{Price paid} \\ \text{Price paid} &= 3200 - 800 \\ &= 2400 \end{aligned}$$

7. **Option 2 is correct.**

Total consumer surplus is the sum of all individual consumer surpluses.

Thus Ruhan's consumer surplus is $R450 - R200 = R250$.

Jayde's consumer surplus is $R350 - R200 = R150$.

Chloe's consumer surplus is $R300 - R200 = R100$.

Total consumer surplus is thus equal to $R250 + R150 + R100 = R500$.

8. **Option 4 is correct.**

Profit per unit is not important because if a smaller margin on more units brings more profits, the smaller margin is better.

9. **Option 1 is correct.**

Statement 1 is correct. If its AVC is over R100, then AVC is above AR, so its revenue would not even cover its variable costs; so its loss would be even greater than its fixed costs. If it instead shut down, it would have no revenue and no variable costs, so its loss would only equal its fixed costs.

10. **Option 2 is correct.**

Statement 2 is false. A monopolist or monopolistic competitor may well be able to raise its price some way without losing all its customers, but there would no doubt come a time when its price was so high that it would lose them all. At this price, the demand and average revenue curve it faces meets the price axis. Regarding 3, note that while the diagrams we use for these firms have demand curves, they do not include supply curves.

11. **Option 4 is correct.**

No firm could have marginal cost (MC) = marginal revenue (MR) at a negative MR because MC cannot be negative.

12. **Option 4 is correct.**

The efficient policy sets price equal to marginal cost (MC), not average total cost (ATC), unless a subsidy is not feasible.

13. **Option 3 is correct.**

Price discrimination has nothing to do with cost structure. The other options are examples of price discrimination based on quantity purchased or segmentation of the market.

14. **Option 2 is correct.**

The firm is on the downward sloping section of the long-run average total cost (LATC) curve, and should expand.

15. **Option 3 is correct.**

Statement 3 is false. The SAC and LAC curves will touch at this output, but not intersect. Instead, the SAC curve will be above the LAC curve at both lower outputs and higher outputs.

16. **Option 4 is correct.**

Statement 4 is false. Like a monopolist, a monopolistic competitor faces a downward-sloping demand curve, which can change over time in terms of both its slope and the point where it meets the price axis. As a result, it might at different times find it best to set the same price but have different outputs, and because there is no single best output at each price, we cannot derive a supply curve for it.

17. **Option 2 is correct.**

Following the Cournot duopoly strategy, one assumes competing firms treat each other's quantity as fixed when making an output decision. Assuming this in the face of repeated counter-evidence weakens this model a bit.

18. **Option 2 is correct.**

The Bertrand model has the highest output and the lowest prices.

19. **Option 3 is correct.**

A should confess no matter what B does. B should confess only if A does.

20. **Option 3 is correct.**

The correct option is 3. One firm will behave strategically while the other behaves naively. Although this is more realistic than the Cournot model, one firm still out-thinks the other.

Please do not hesitate to contact me if you do not understand any of the explanations given in this tutorial letter.

Wishing you success in your studies.

Ms. Breytenbach and Mr. Lelaka