

Instructions

- (1) Please read the instruction carefully. Also take this habit with you into the exam room.
- (2) Please read each question carefully and answer the questions straightforwardly. Always provide economic reasons at least a paragraph for your analysis, or a graph when necessary, even when the question does not indicate so.
- (3) Handing and submitting assignments are only available via BE Moodle.

Answering the questions and preparing answer sheets

- (1) Answers are to be handwritten, in either digital or analog form, in a blank canvas or any clean paper. Make sure that your handwriting is clearly visible and readable.
- (2) There is no need to rewrite the question. Just indicate the question number clearly for each of the answer, such as 1.a).
- (3) When done, for the digital case, collage all the pages into a single PDF file. For those who write on sheets of paper, take photo of all pages then convert all of them into a single PDF file as well.
- (4) **Name your PDF file as StudentID_YourNickname, such as 640123456_Bo.**

Submitting your answers

- (1) Make sure your file does not exceed 10MB. This is the maximum file size for BE Moodle upload.
- (2) Login to BE Moodle, head into the course, then the assignment topic.
- (3) Choose your file to submit. Done. There will be timestamp for your upload date and time, so please make sure to not submit later than that.

1. Belle is choosing ham (h) and cheese (c), which is assumed to be substitutable goods for her. Her total utility from each product is given in the table here.

Quantity	Total utility from ham (TU_h)	Total utility from cheese (TU_c)
1	15	12
2	26	21
3	35	27
4	41	32
5	45	35
6	48	37
7	49	38

Answer the following questions.

1.a) If Belle has \$7 budget and both ham and cheese cost \$1 each, how many units of ham and cheese she should purchase to maximize her utility? Explain your method clearly.

1.b) Provide a clear explanation why her utility will not be maximized if the condition that you apply in part a. is not yet satisfied.

1.a)

Quantity	Total utility from ham (TU _h)	Total utility from cheese (TU _c)
1	15 ✓	12 ✓
2	26 ✓	21 ✓
3	35 ✓	27 ✓
4	41 ✓	32
5	45	35
6	48	37
7	49	38

$$\frac{MU_h}{MU_c} = \frac{P_h}{P_c}$$

$$\frac{MU_h}{MU_c} = \frac{1}{1}$$

$$MU_h = MU_c$$

$$I = \$7, \quad P_h = \$1, \quad P_c = \$1$$

In this situation, we don't need to find the net gain or net benefit that consumer will get as both product are priced equally.

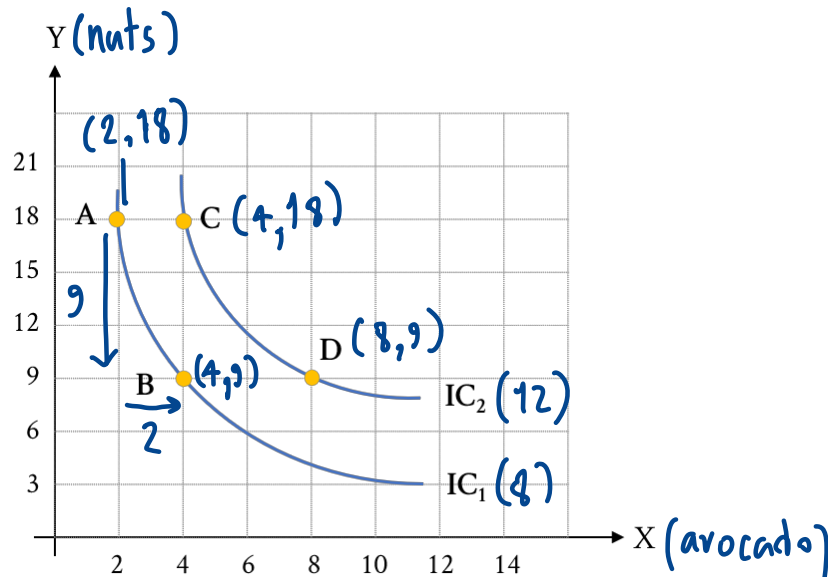
According to the table, to maximize her utility with all of her budget, she should purchase 4 units of ham and 3 units of cheese.

1.b) Because of her budget, she is not yet satisfied because her budget is not enough to reach the point where $MU = 0$. In other words, the analysis satisfies Walras' Law.

Assignment 2

Assigned on Sep 22th, 2021. To be submitted on Oct 7th, 2021 before midnight.

2. A consumer finds that for him/her avocado (X) and nuts (Y) are substitutes. Assumed that this consumer yields 8 and 12 utils on IC_1 and IC_2 respectively, show your work and answer the following questions.



- 2.a) Measured from point A to B, assumed P_y is 10 baht per unit, how much P_x must be to make you conclude that the consumer's equilibrium is on point B?
- 2.b) Measured from point A to B, assumed P_x is 180 baht per unit, how much budget does this consumer has to achieve the equilibrium on point B?
- 2.c) Measured from point C to point D, how much is the average marginal utility per unit of avocado?
- 2.d) Show that this consumer's utility received from consuming avocado is in accordance with the law of diminishing marginal utility, using any essential information from any point. (But highly recommend that you consider all the points)

$$2.a) \text{MRS}_{xy}(B) = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{y_B - y_A}{x_B - x_A} = \frac{9 - 18}{4 - 2} = -\frac{9}{2}$$

$$\frac{P_x}{P_y} = |\text{MRS}_{xy}(B)|$$

$$P_x = |\text{MRS}_{xy}(B)| \cdot P_y = \left(\frac{9}{2}\right) \cdot (10) = 45$$

$\therefore$ To conclude that the consumer's equilibrium is on point B, P_x must be 45 baht per unit.

$$2.b) \frac{P_x}{P_y} = |\text{MRS}_{xy}(B)|$$

$$P_y = \frac{P_x}{|\text{MRS}_{xy}(B)|} = \frac{180}{\frac{9}{2}} = (180) \left(\frac{2}{9}\right) = 40$$

Let I = budget

$$I = P_x \cdot X + P_y \cdot Y = (180)(2) + 40(9) = 360 + 360 = 720$$

$\therefore$ From point A to achieve the equilibrium on point B, this consumer needs 720 baht.

2.c) From C to D, the slope = $\frac{\Delta y}{\Delta x} = \frac{y_D - y_C}{x_D - x_C} = \frac{9 - 18}{8 - 4} = -\frac{9}{4}$

As we know that all points on the same IC have the same amount of utility which is 12 in this case.

From C to D, this consumer gives up 9 nuts and receive 4 more units of avocado, meaning 4 units of avocado (x) and 9 units of nut (y) have the same amount of utility. So, at D, the MU_x is 2.25 times to MU_y .

2.d) To be clear about the law of diminishing marginal utility, it means that consuming the more unit of products or services, having the less amount of marginal utility.

From A to B, this consumer gives up 9 units of nut while receives only 2 units of avocado. It shows that the marginal utility of avocado at B is higher than at A because 2 units of avocado worth 9 units of nut with the same amount of utility.

Furthermore, from c to D , this consumer also gives up 9 units of nut while receives only 4 units of avocado. It shows that 4 units of avocado worth 9 units of nut.

According to the explanation above, both of these examples show that a few units of avocado can sufficient many units of nut because the marginal utility of avocado is more than nuts as the unit of avocado is less than nuts.