EE211 Assignment #2 (Section 2 Semester 2/2020)

Instructions:

- Assigned date is Thursday the 4th, March 2021. **Due date is Thursday the 11th, March 2021 before 11.00 PM.**
- Submission is only received through BE Moodle platform as PDF file.
- Name your file as StudentID_nickname, such as 1234567489_Bo. **Please also comply to this instruction. It would be a lot easier to handle with your files.**
- There is no need to rewrite the question into your answer sheets. Indicating clearly question and item number is sufficient.
- Write your nickname and student ID on top-right corner of the first page.
- For those who do not have a digital device to write on, you can write your answers in sheets of paper, take pictures, convert them into a single PDF then submit in on Moodle.

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.

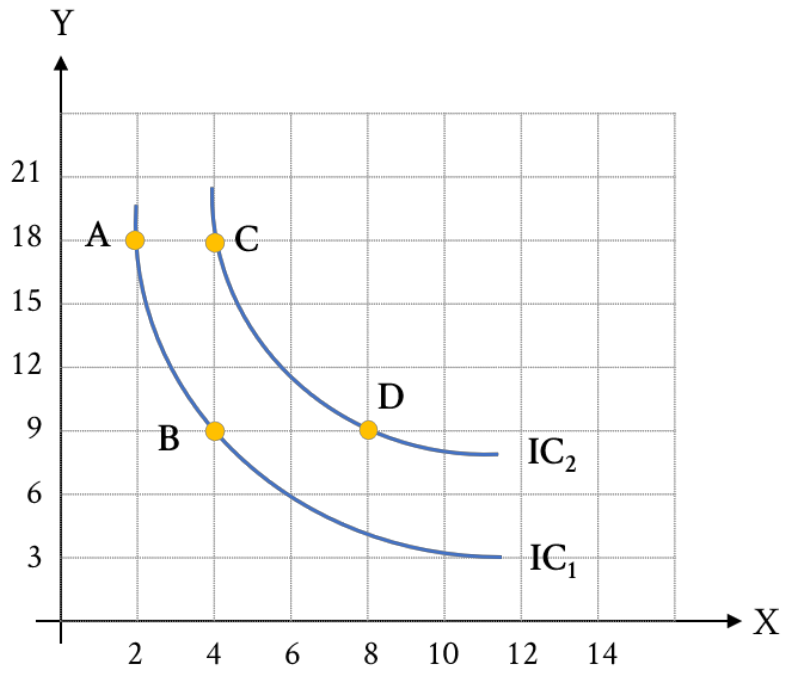
Quantity	Total utility from ham (TU_h)	Total utility from cheese (TU_c)
1	15	12
2	26	21
3	35	27
4	41	32
5	45	35
6	48	37
7	49	38

Answer the following questions.

(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.

(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.

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 IC1 and IC2 respectively, show your work and answer the following questions.



(a) Measured from point A to B, assumed Py is 10 baht per unit, how much Px must be to make you conclude that the consumer's equilibrium is on point B?

(b) Measured from point A to B, assumed Px is 180 baht per unit, how much budget does this consumer has to achieve the equilibrium on point B?

(c) Measured from point C to point D, how much is the average marginal utility per unit of avocado?

(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)

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Weeraya Khongpatimakorn "6304649852"

ham = 19 cheese = 19

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	15	12	12
2	26	11	21	9
3	35	9	27 ✓	6
4	41 ✓	6	32	5
5	45	4	35	3
6	48	3	37	2
7	49	1	38	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.

$\frac{MU_x}{P_x}$	$\frac{MU_y}{P_y}$
$\frac{15}{1}=15$	$\frac{12}{1}=12$
$\frac{11}{1}=11$	$\frac{9}{1}=9$
$\frac{9}{1}=9$	$\frac{6}{1}=6$
$\frac{6}{1}=6$	$\frac{5}{1}=5$
$\frac{4}{1}=4$	$\frac{3}{1}=3$
$\frac{3}{1}=3$	$\frac{2}{1}=2$
$\frac{1}{1}=1$	$\frac{1}{1}=1$

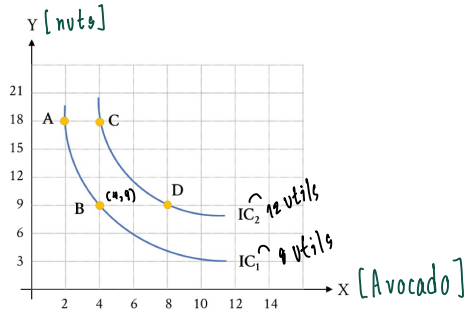
she has 7 dollar, and both cheese and ham are substitute, so she need to compare by MU which give you utilities per dollar
with limit of budget, she can buy 4 hams and 3 cheese. which is equal to 69 utils.

∴ customer must buy good until the $\frac{MU_x}{P_x}$ equal to $\frac{MU_y}{P_y}$ with his/her last dollar spent

(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.

∴ The reasons why her utility will not be maximized, because she has limit budget which limit her utility because she need to pay for the good. If there is no condition, she will consume both goods until her marginal utility of ham and cheese equal to "0"

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 IC1 and IC2 respectively, show your work and answer the following questions.



(a) Measured from point A to B, assumed Py is 10 baht per unit, how much Px must be to make you conclude that the consumer's equilibrium is on point B?

$P_y = 10$
$P_x = ?$

consumer utilities: $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$

and $MRS = \left|\frac{\Delta y}{\Delta x}\right| = \frac{MU_x}{MU_y}$

$= \left|\frac{18-9}{2}\right| = \frac{9}{2} = \frac{4.5}{1}$

$MU_x = 4.5$
$MU_y = 1$

So, $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$

$\therefore \frac{4.5}{P_x} = \frac{1}{10}$

$P_x = 45$ baht

(b) Measured from point A to B, assumed Px is 180 baht per unit, how much budget does this consumer has to achieve the equilibrium on point B?

As $\frac{MU_x}{MU_y} = \frac{9}{2}$ and $P_x = 180$ /unit

so $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$

$\frac{9}{180} = \frac{2}{P_y}$

$P_y = \frac{360}{9} = 40$ B/unit

from Budget line

$I = P_x \cdot x + P_y \cdot y$

(point B = (4, 9))

$I = 180(4) + 40(9)$

$= 720 + 360$

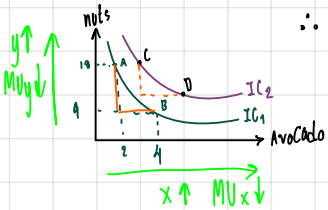
$= 1080$ baht

(c) Measured from point C to point D, how much is the average marginal utility per unit of avocado?

when we gain 4 unit of Avocado, we gain 4 util
we gain by 1 unit of Avocado we gain $\frac{4 \times 1}{4} = 1$

the average of marginal u / per unit of Avocado

(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)



∴ From the law of diminishing marginal utility.
when we consume more Avocado, $MU_{Avocado}$ will decrease because it is getting close to maximization of Utility Avocado.
On the other hand, when consume more Avocado you need to give up nuts at A. there are many nuts are consumed, so its MU_{nuts} is very low but the $MU_{Avocado}$ is very high when we consume more Avocado at A→B, there are alot of nuts that give up for 1 Avocado

$\frac{MU_x}{MU_y}$