EE211 Assignment #2 (Section 2 Semester 2/2020) Tanthorn 6304641548

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.

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)	1$		Total utility from cheese (TU_c)	1$	
1	15	15	(1)	12	12	(2)
2	26	11	(3)	21	9	(4)
3	35	9	(5)	27	6	(7)
4	41	6	(6)	32	5	
5	45	4		35	3	
6	48	3		37	2	
7	49	1		38	1	

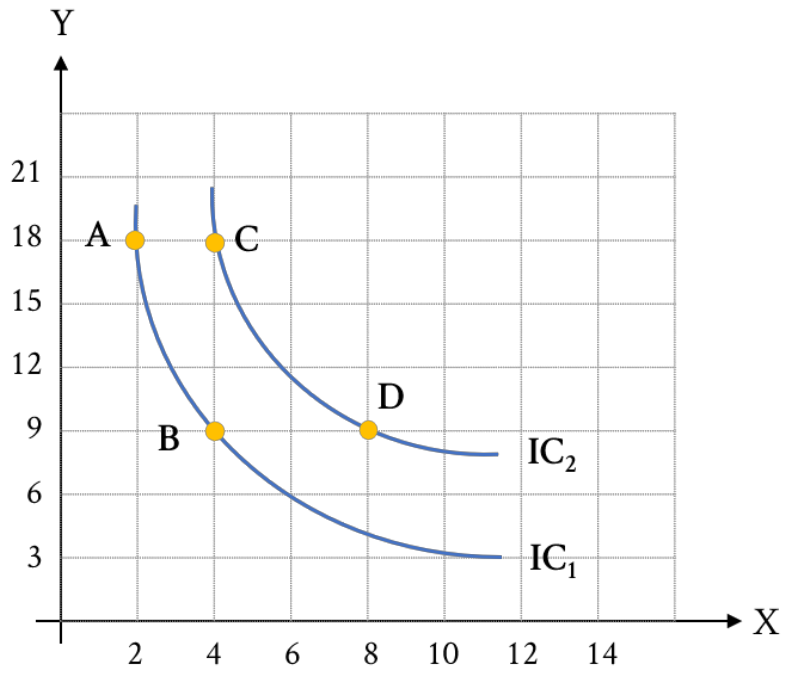
(a) If Belle has $7 budget and both ham and cheese cost $1 each, how many units of ham and cheese she should purchase to maximize her utility? Explain your method clearly.

In order to maximize utility she should purchase 4 unit of ham and 3 unit of cheese. This combination of purchase come from comparing marginal utility of each unit of transaction which has more marginal utility and so on until we have spend all of the budget.

(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.

If there was no such condition apply in part A and each purchase were chosen randomly. Her utility wouldn't be able to maximize. For instance, If she decides to purchase second unit of ham instead of following the utility maximize rule (transaction ②) She would have loss the extra marginal utility from purchasing first unit of cheese. In addition, if she doesn't follow the rule of purchasing until marginal utility reach zero in both goods or she run out of budget. Her utility will not be maximize as well.

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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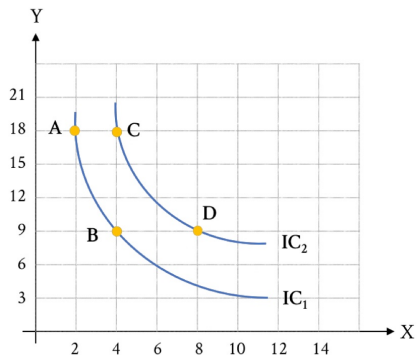


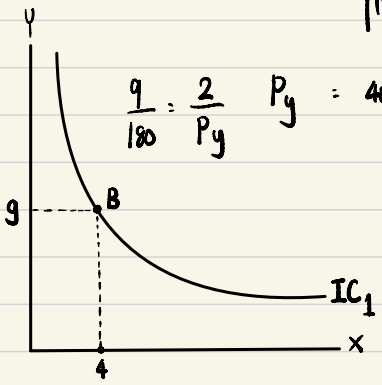
(a) Measured from point A to B, assumed Py is 10 baht per unit, how much Px must be to make you conclude that the consumer's equilibrium is on point B?

$|MRS_{xy}| = \left|\frac{\Delta Y}{\Delta X}\right|$ From point A → B $\frac{MU_x}{MU_y} = \frac{9}{2}$

$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} \rightarrow \frac{9}{P_x} = \frac{2}{10}$

If consumer equilibrium is on point B.
P_x must be equal to 45 baht per unit. #

(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?



$|MRS_{xy}| = \left|\frac{\Delta y}{\Delta x}\right|$ from point A → B $\frac{MU_x}{MU_y} = \frac{9}{2}$

$\frac{9}{180} = \frac{2}{P_y}$ $P_y = 40$ ฿ per unit

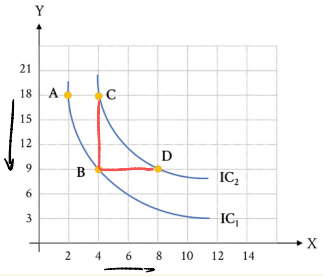
budget

$I \geq P_x \cdot (x) + P_y (y)$

$\geq 180 \cdot 4 + 40 \cdot 9$

In order to achieve equilibrium on point B
She must have the total budget of 1080 Baht #

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.



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

Total Util of IC1 = 8 ; IC_2 = 12

From point C -> B Nut ↓ by 9 therfore Util ↓ by 4

From point B -> D Avocado ↑ by 4 therefore Util ↑ by 4

If the marginal utility of consuming 4 more avocado is 4 util. This mean that average marginal utility = 4/4 = 1

(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)

In IC_1 curve, moving from point A to B Consumers give up 9 unit of nut for 2 unit of avocado. (18->9) and (2->4)

In IC_2 curve, from C to D consumer gives up 9 unit of nut for 4 avocado. (18->9) (4->8)

This shows that the more you consumes certain product. According to law of diminishing marginal utility, you will gain less marginal utility overtime from consuming more.