

1a)

	MU_b	MU_c	choice	BR
	15/1 = 15	12/1 = 12	ham	7-1 = 6
	11/1 = 11	9/1 = 9	cheese	6-1 = 5
	9/1 = 9	6/1 = 6	ham	5-1 = 4
	6/1 = 6		ham	4-1 = 3
			cheese	3-1 = 2
			ham	2-1 = 1
			cheese	1-1 = 0

According to the table, This method can be a good way to maximize her utility. First, Choosing ham may gain total utility to 15. Second, Choosing cheese to increase her total utility to 27. Third, Choosing the second ham may gain total utility to 38. Then, for the remaining, Choosing 2 hams and 2 chees. In This step, There is no effect on total utility whether she choose which one first. At the conclusion, She will get 66 total utility from using this method.

2a) According to the budget constraint, she can't reach her satiation point. In addition, she would be satisfy if she'd get more budget. Although, this method already provide her a maximum utility with the budget that she's got.

$$1b) MRS_{xy(b)} = \frac{Y_b - Y_a}{X_b - X_a} = \frac{9 - 18}{4 - 2} = -\frac{9}{2} \text{ so on, to conclude that}$$

the consumer's equilibrium is on point b, $\frac{P_x}{P_y}$ must be equal to $|MRS_{xy(b)}|$,

$$\frac{P_x}{10} = \frac{9}{2} \therefore P_x = 45$$

$$2b) MRS_{xy(b)} = -\frac{9}{2}; \frac{P_x}{P_y} \text{ must be equal to } |MRS_{xy(b)}| \frac{180}{P_y} = \frac{9}{2}, \text{ so } P_y = 40$$

$$P_i = (P_x \cdot X) + (P_y \cdot Y) = (180 \cdot 9) + (40 \cdot 4) = 1620 + 160 = 1780$$

\therefore The consumer must have 1780 baht to achieve the equilibrium on point B.

$$3b) MRS_{xy(d)} = \frac{Y_d - Y_c}{X_d - X_c} = \frac{9 - 18}{8 - 4} = -\frac{9}{4} \quad \frac{MU_x}{MU_y} = \frac{9}{4}$$

The marginal utility of 4 avocados is 9

\therefore The average marginal utility per unit of avocado is $\frac{9}{4} = 2.25$

4b) According to the law of diminishing, consuming more avocado may increase total. For example, on point B and D, the consumer consumes same amount of nut, but different amount of avocado. Therefore, he or she can get 4 more utils from consuming 4 more avocados. However, when he or she reaches the saturation point, the slope of IC will be 0, and then reverse. This may demonstrate that the marginal utility can be negative if he or she consumes over saturation point, and the total utility that he or she got will decrease.