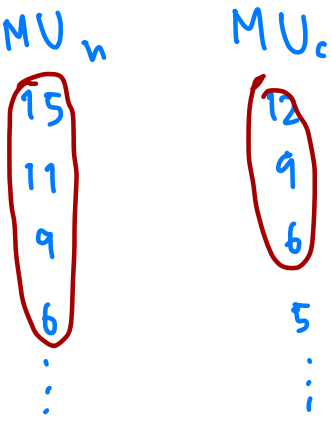
1. a)



Choose the one with highest marginal utility. Fisrtly choose the ham then cheese then 2 hams then 2 cheese then another ham.

So to maximize her utility she should purchase 4 units of hams and 3 units of cheese.

1. b) Because the method used in a) is the way to maximize the utility, the utility will not be maximized is the condition is not satisfied. The total utility of the purchase in a) is the highest so there is no alternative way.

2. a) From A to B

$$|MRS| = \left|\frac{-9}{2}\right| = \frac{P_x}{10}$$

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

$P_x = 45$ baht per unit

2. b) When $P_x = 180$,

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

$$P_y = \frac{\cancel{180}^{20} \times 2}{\cancel{9}_{1}}$$

$P_y = 40$ baht per unit

According to Walrus' law, we have to spend all the budget.

$$9(40) + 4(180) = 1{,}080$$

The budget = 1,080 baht

2. c) $|MRS_{xy}| = \left|\frac{\Delta y}{\Delta x}\right| = \frac{MU_x}{MU_y}$

$$\left|\frac{18-9}{4-8}\right| = \frac{MU_x}{MU_y}$$

$$\frac{9}{4} = \frac{MU_x}{MU_y}$$

Average Marginal utility of Avocado is $\frac{9}{4}$.

2. d) From A to B, the consumer loses 9 nuts for 2 avocados. From C to D, the consumer loses 9 nuts for 4 avocados. Because the consumer have to consume more avocados to replace the utility of 9 nuts, it can be concluded that the law of diminishing marginal utility is applied.