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Assignment #2

Answer

1. a. To maximize her utility, Bella should purchase 4 units of ham and 3 units of cheese.

Quantity	TU_h	MU_h	TU_c	MU_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

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

$$\Rightarrow \frac{6}{1} = \frac{6}{1} = 6$$

b. If the condition that is applied in part a is not yet satisfied, she will not maximize her utility because at other points will provide her too much or too little quantity of cheese or ham, and it goes vice versa for MU_h or MU_c based on the law of diminishing marginal utility.

(At the other points could be $\frac{MU_h}{P_h} > \frac{MU_c}{P_c}$ or $\frac{MU_h}{P_h} < \frac{MU_c}{P_c}$)

2. a. Find P_x

. Since $MRS_{xy(a\to b)} = \left|\frac{\Delta y}{\Delta x}\right| = \frac{MU_x}{MU_y}$

$$= \left|\frac{18-9}{2-4}\right| = \left|\frac{-9}{2}\right| = |-4.5| = 4.5$$

$$\Rightarrow \frac{MU_x}{MU_y} = 4.5 \Rightarrow 4.5MU_y = MU_x$$

. Consumer's equilibrium is on point B $= \frac{MU_x}{P_x} = \frac{MU_y}{P_y}$

$$\Rightarrow P_x = \frac{MU_x \cdot P_y}{MU_y} = \frac{4.5MU_y \times 10}{MU_y} = \underline{45 \text{ baht per unit}}$$

b. Find the budget of the consumer has to achieve the equilibrium on point B

$$= \left|\frac{\Delta y}{\Delta x}\right| = \left|\frac{18-9}{2-4}\right| = \left|\frac{9}{-2}\right| = |-4.5| = 4.5$$

$$\frac{P_x}{P_y} = \left|\frac{\Delta y}{\Delta x}\right| = 4.5 \Rightarrow P_y = \frac{P_x}{4.5} = \frac{180}{4.5} = 40 \text{ baht per unit}$$

Budget of the consumer at point B $= P_x \cdot x + P_y \cdot y = 180 \cdot 4 + 40 \cdot 9 = \underline{1080 \text{ baht}}$

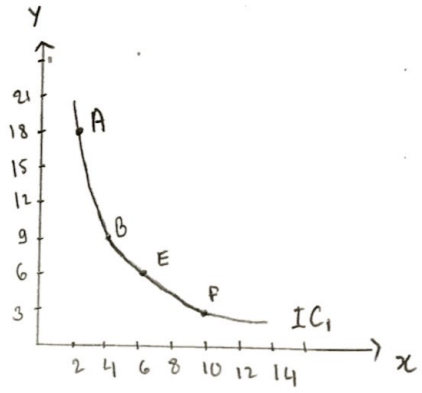
C. Find the average marginal utility per unit of avocado (x)

$$MRS_{(C \to D)} = \left|\frac{\Delta y}{\Delta x}\right| = \left|\frac{18-9}{4-8}\right| = \left|\frac{9}{-4}\right| = 2.25$$

d. Show that this consumer's utility received from consuming avocado is in accordance with the law of diminishing marginal utility.

On IC_1:

- $|MRS_{(A \to B)}| = \left|\frac{18-9}{2-4}\right| = 4.5$
- $MRS_{(B-E)} = \left|\frac{9-6}{4-6}\right| = 1.5$
- $|MRS_{(E \to F)}| = \left|\frac{6-3}{6-10}\right| = 0.75$



As this consumer more avocado (x), she get less nuts Y, and when there is more X, there is less MU_x. When there is less Y, there is more MU_y.