

Marginal Utility

ex. Julie wants to have a party w/ icecream and potato chips.
Assume icecream (I) costs \$4 and chips (C) cost \$2.
How many icecreams and chips would Julie buy to maximize her utility?

Utility is maximized when $\frac{MU_a}{P_a} = \frac{MU_b}{P_b}$

Units of I	U	MU	MU/P	Units of C	U	MU	MU/P
1	100	100	25	1	100	100	50
2	180	80	20	2	180	80	40
3	250	70	17.5	3	250	70	35
4	300	50	12.5	4	300	50	25
5	320	20	5	5	320	20	10
6	330	10	2.5	6	330	10	5

$$MU_k = U_k - U_{k-1} \quad \text{ex. } MU_1 = U_1 - U_0 = 100 - 0 = 100$$
$$MU_2 = U_2 - U_1 = 180 - 100 = 80$$

Answer: 5 icecreams and 6 potato chips

★ Notes:

- Budget: Julie has \$40 dollars.

$$5(4) + 6(2) = 20 + 12 = 32$$

- Law of Diminishing Marginal Utility

- When $MU_k = 0$, $U_k = U_{k-1}$ meaning total utility didn't change.
- When MU_k is negative, $U_k < U_{k-1}$ meaning total utility is decreasing.