

Practice Set 2

Consumer Choice & Demand

This set contains problems for your own practice. It is highly recommended to work on the problems on your own. Do not just read the provided solutions. Instead, try to solve the problems and use the solutions only when you cannot continue on your own. Reading problems that someone else has solved has the same value for your preparation like watching someone else running a marathon on TV and then expecting to be able to run it, too. If you have questions on this set, please ask your section's teaching assistant.

- For George, utility from visiting his mother-in-law is -12 and utility from watching Peppa Pig with his daughter is -6. Comment on the accuracy of the statements below:
 - "George dislikes visiting his mother-in-law".
 - "George would prefer doing nothing than visiting his mother-in-law".
 - "George enjoys watching Peppa Pig with his daughter twice as much as visiting his mother-in-law".

- Amethyst's marginal utility from riding a roller coaster is given in the following table.

Rides	1	2	3	4	5	6	7	8
MU	20	18	12	6	1	0	-4	-100

- Given that her utility from zero rides is 0, calculate Amethyst's utility for rides 1 to 8.
 - Explain the meaning of the negative marginal utility for the 7th and the 8th ride.
 - Does Amethyst prefer 7 rides or no rides at all?
 - Does Amethyst prefer 8 rides or no rides at all?
- A firm faces the demand function $p = 12 - 2q$, where p is the price in dollars and q is the quantity in whole units. Find how much is the elasticity of demand when the revenue is maximum.
 - Angela consumes only x and y . Explain why she has not made the optimal choice between x and y if

$$\frac{MU_x}{p_x} < \frac{MU_y}{p_y}.$$

What should she do in this case?

- Fernando distributes a fixed budget between books and cosmetics. This month he has spent his budget to buy 4 books and 2 bottles of cologne. The last book he bought was "The Idiot" by Feodor Dostoyevsky, for 11 dollars, which yielded 55 units of utility to him. The last bottle of cologne he bought was the Aqua Di Gio by Armani, for 80 dollars, which yielded 60 units of utility to him. Was Fernando's choice utility maximizing?
- In the lecture we derived that the *opportunity cost* of food in terms of entertainment is given by

$$OC_{food} = \frac{\text{units of ent sacrificed}}{\text{units of food received}}$$

and, also, by the ratio of prices

$$OC_{food} = \frac{\text{price}_{food}}{\text{price}_{ent}}$$

use an example to explain why those two are equivalent.

- [Optional – only for students with advanced math background] The demand function $p = 12 - 2q$ has first derivative dp/dq equal to -2. Explain why the elasticity of demand is not constant and equal to -2.