Prerequisites for practice No. 1

Terms: profit, indifference curve, budget constraint, MRS (marginal rate of substitution), consumer optimum, MRSe (marginal rate of substitution in exchange) MRSc (marginal rate of substitution in consumption)

Theory:

1) Name the consumer´s axioms.
2) Define the term profit
3) The slope of the indifference curve express the fact, that MRSc .....

Samples:

1. Price of goods x = 120Kč, Price of goods y = 80Kč. Consumer´s monetary income = 5000Kč. Determine:
   a) MRSe
   b) How do BL (budget line) and MRSe change, if the income changes from 5000Kč to 8000Kč?
   c) How do BL and MRSe change if the x-goods´ price changes to 100Kč?

2. Draw the indifference curve for goods X and Y if:
   a) X is goods, Y is goods
   b) goods X and Y are perfect substitutes
   c) goods X and Y are perfect complements
   d) goods X is bad
   e) goods X is neutrum
   f) after changing the preferences, from the 4th X-good on, the X is neutrum

3. Martin loves beer and he doesn´t care, whether he´s drinking "Pradoj" or "Gampinus". He wouldn't have drunk more than 25 litres a week, even if he had a beer for free. Knowing these facts:
   a) Draw the indifference curve with Pradoj and Gampinus on the axes.

4. The consumer buys goods X and Y. The shape of the indifference curve in the equilibrium point equals to $(200/X^2)$. Px = 60 Kč , Py = 30 Kč. I = 1200 Kč. Determine the optimal amount of goods X and Y.

5. Draw the derivation of individual labour supply. The wage rates are 100 Kč, 200 Kč and 400 Kč. Optimal number of working hours (according to the sequence of wage rates) are, 9, 11, 10 working hours.

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6. Determine the marginal utility (MU) after consuming the 10th unit of goods X, knowing the function of total utility: $TU = 24X - X^2$

7. The consumer optimum. Petr chose to spend 4 400 Kč on culture a year. He buys video cassettes with action movies and visits concerts during „Pražské jaro". He doesn´t have other expenses. The function of utility from consuming the video cassettes and visiting

concerts is $U = 10X + 24Y — 0{,}5X^2 — 0{,}5Y^2$, where X represents the amount of video cassettes and Y the number of concerts visited. One video cassette costs 200 Kč and one ticket to a concert costs 600 Kč.
- Define MRSc.
- Define the budget line.
- Define the optimal amount of video cassettes and concerts.
- Solve a) using the method of Lagrange multipliers za b) using the condition for a consumer optimum

8. Miss Dvořák spends her free-time with swimming (X) and going to sauna (Y). An hour swimming costs 50 Kč and the price of one hour in sauna is 100 Kč. Marginal utility of swimming is given by the equation MU= 400 – 50X and as for marginal utility of spending time in sauna it´s MUy= 300 – 100Y. Miss Dvořák´s monetary income reserved for her free-time is 4000 Kč a year. Define, how much time does miss Dvořák spend doing these activities at the point of the optimum.

Extra samples ☺

9. The nature of Mrs. Novák´s behaviour who consumes two types of goods (hot dogs (y) and the black salceson (x)), is given by the function of a total utility TU = 20x+6y+xy. Mrs. Novák´s monetary income for this consumption is I = 5xx Kč. The price of a hot-dog is P = 10 Kč and a piece of black salceson costs 20 Kč. Determine:
   - The optimal amount of both goods that Mrs. Novák is consuming.
   - How does the consumed amount of both goods change after Mrs. Novák´s monetary income changes to I= 720

Put the day of your birthday for "xx".

10. The nature of Mr. Pulpán´s behaviour who consumes two types of goods (beer (y) and the cheese “olomoucké tvarůžky” (x)), is given by the function of a total utility TU = 8x+2y+xy, Mr. Pulpán´s monetary income is Y = 2xx Kč. The price for one beer is 10 Kč and a piece of the cheese costs 30 Kč.
    - What is the optimal amount of both goods in Mr. Pulán´s equilibrium?
    - What is the new optimal amount of both goods if the price of the cheese is reduced to 10 Kč for one piece?

Put the day of your birthday for "xx".

Next practice:
Income and substitution effect
Elasticity
Demand and supply

Literature:
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