

Problem 1 Draw a budget line to illustrate each of the following:

1. $p_1 = 1, p_2 = 1, m = 10$
2. $p_1 = 2, p_2 = 1, m = 20$
3. $p_1 = 1, p_2 = 0, m = 10$
4. $p_1 = p_2, m = 15p_1$

Problem 2 Milan's utility function is $U(X, Y) = X \cdot Y$

1. Suppose he originally consumed 4 units of X and 12 units of Y . If his consumption of Y is reduced to 8, how much X must he have to be as well as he was to begin with.
2. which bundle would Milan like better:
 - (a) 3 units of X and 10 units of Y , or
 - (b) 4 units of X and 8 units of Y .

Problem 3 Suppose Vrastani people have 2 left feet and 1 right foot. We want to derive a utility function for a Vrastani who has L left shoes and R right shoes.

1. Draw the indifference curves.
2. Is it:
 - (a) rational
 - (b) monotonic
 - (c) convex
 - i. strictly convex
 - ii. weakly convex

TRUE or FALSE

Claim 1 *If Katka's preferences are transitive, then she always prefers more to less.*

Claim 2 *If Honza has utility function $U = 2 \min \{x, y\}$ then x and y are perfect complements for him.*

Claim 3 *If Soňa's preferences are represented by the utility function $U(x, y) = \max \{x, y\}$ then her preferences are convex.*

Claim 4 *Rišo's utility function is $U(x_1, x_2) = (x_1 + x_2)^3$. His indifference curves are downward-sloping, parallel straight lines.*

Claim 5 *The utility function $U(x, z) = 2 \ln x + 3 \ln z$ represents Cobb-Douglas preferences.*

Claim 6 *At a boundary optimum Alena's indifference curve must be tangent to her budget line.*

Claim 7 *Agáta's utility function is $U = \min \{x, y\}$. She maximises her utility subject to her budget constraint. If the price of x rises and price of y and income m remain constant, then her consumption of y will decrease.*

Claim 8 *Kamil's utility function is $U(x, y) = xy^2$. His marginal rate of substitution between x and y does not change if you double the amount of both goods.*