

Microeconomics — class 2

1.

Check properties of the preference relation from exercise 9 from previous class (continuity, monotonicity, strict monotonicity, local nonsatiation, concavity and strict concavity).

2.

Prove or find a counterexample:

- a) If there exists a continuous utility function for \succeq , then \succeq is continuous.
- b) If there exists a concave (strictly concave) utility function for \succeq , then \succeq is convex (strictly convex).
- c) If there exists a monotone (strictly monotone) utility function for \succeq , then \succeq is monotone (strictly monotone).
- d) Every utility function for monotone (strictly monotone) preferences is monotone (strictly monotone) .
- e) Every utility function for continuous preferences is continuous.

3.

Maximize Cobb-Douglasa utility function $u(x_1, u_2) = x_1^a \cdot x_2^b$ over Walrasian budget set $B_{\mathbf{p},m}$.

4.

Maximize perfect substitutes utility function $u(x_1, u_2) = a \cdot x_1 + b \cdot x_2$ over Walrasian budget set $B_{\mathbf{p},m}$.