

INDIVIDUAL DECISION MAKING
Master M1 MAEF - Elena del Mercato

TD – Wednesday, September 23, 2026

Consumer Theory

$L = 2$ is the number of commodities and $\mathbb{R}_+^2$ is the consumption set of the consumer.

Exercise 1 (Lexicographic preferences). For all $x = (x_1, x_2) \in \mathbb{R}_+^2$ and $\bar{x} = (\bar{x}_1, \bar{x}_2) \in \mathbb{R}_+^2$,

$$x \succsim \bar{x} \iff "x_1 > \bar{x}_1" \text{ or } "x_1 = \bar{x}_1 \text{ and } x_2 \geq \bar{x}_2"$$

1. For every $\bar{x} \in \mathbb{R}_+^2$, determine and draw the upper contour set $P(\bar{x})$.
2. Show that for every $\bar{x} \in \mathbb{R}_+^2$, the indifference set $I(\bar{x})$ is a singleton.

Exercise 2 (Linear preferences). For all $x = (x_1, x_2) \in \mathbb{R}_+^2$ and $\bar{x} = (\bar{x}_1, \bar{x}_2) \in \mathbb{R}_+^2$,

$$x \succsim \bar{x} \iff ax_1 + bx_2 \geq a\bar{x}_1 + b\bar{x}_2$$

with $a > 0$ and $b > 0$. For every $\bar{x} \in \mathbb{R}_+^2$, determine and draw the indifference curve $I(\bar{x})$ and the upper contour set $P(\bar{x})$.

Exercise 3 (Leontief preferences). For all $x = (x_1, x_2) \in \mathbb{R}_+^2$ and $\bar{x} = (\bar{x}_1, \bar{x}_2) \in \mathbb{R}_+^2$,

$$x \succsim \bar{x} \iff \min\{x_1, x_2\} \geq \min\{\bar{x}_1, \bar{x}_2\}$$

For every $\bar{x} \in \mathbb{R}_+^2$, determine and draw the indifference curve $I(\bar{x})$ and the upper contour set $P(\bar{x})$.