Microeconomics 1 – Part A: Individual decision making
Masters M1 IMMAEF & MAEF

TD – Wednesday, October 23, 2024

Producer Theory

The following exercise should be submitted on Wednesday, October 23.

The **basic properties (BP)** of Y to be verified are the following ones.

(BP): Possibility of inaction, closedness, impossibility of free production ("no free lunch"), free-disposal, convexity, increasing/decreasing/constant returns to scale.

Exercise. A firm produces commodity 2 using commodity 1 as an input. The production function is:

$$f(z) = \alpha z \text{ with } \alpha > 0 \text{ and } z \geq 0.$$

1. Determine, both formally and graphically, the production set Y associated with the production function f.
2. Determine if the production Y verifies the basic properties **(BP)**.
3. Answer questions 1) and 2) for the production function: $f(z) = \alpha\sqrt{z}$ with $\alpha > 0$ and $z \geq 0$.
4. Answer questions 1) and 2) for the production function: $f(z) = \alpha[1 - \exp(-kz)]$ with $k > 0$, $\alpha > 0$ and $z \geq 0$.