# HOMEWORK 11

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**Proposition 9.12.** *Let $A$ and $B$ be sets. There exists an injection from $A$ to $B$ if and only if there exists a surjection from $B$ to $A$.*

*Proof.* □

**Proposition 10.9.** *Let $x \in \mathbb{R}$ be such that $0 \leq x \leq 1$, and let $m, n \in \mathbb{N}$ be such that $m \geq n$. Then $x^m \leq x^n$.*

*Proof.* □

**Proposition 10.16.** *If the sequence $(x_k)$ converges to $L$, then*

$$\lim_{k\to\infty} x_{k+1} = L.$$

*Proof.* □

**Proposition 10.14.** *If $(x_k)$ converges to $L$ and to $L'$ then $L = L'$.*

*Proof.* □

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