

**Logic 1, WS 2004. Homework 6, given Dec 02, due Dec 09**

Prove in informal style, using the basic properties of sets and the inference rules which you consider appropriate:

$$\mathcal{P}(A) = \{P \mid P \subseteq A\}$$

**iff**

$$\mathcal{P}[\emptyset] = \{\emptyset\} \wedge ((A \cap = \emptyset) \Rightarrow (\forall_{a \in A} \forall_P (P = \mathcal{P}(A \setminus \{a\}) \Rightarrow \mathcal{P}(A) = P \cup \{B \cup \{a\} \mid B \in P\}))).$$