$$\Rightarrow \underbrace{\{x\}\cap\{y\}}_{\subseteq \{y\}} = \{x\} \Rightarrow \{x\}\subseteq\{y\} \Rightarrow x \in \{y\} \Leftrightarrow x = y$$

"$\supseteq$": Fie $J \neq \emptyset$, $(A_i)_{i\in J} \in \mathcal{P}(A)$

Conform început (1) $\Rightarrow f\left(\bigcap_{i\in J} A_i\right) \subseteq \bigcap_{i\in J} f(A_i)$ $\overset{\text{"}\supseteq\text{"}}{\overline{\quad ? \quad}}$

Fie $y \in \bigcap_{i\in J} A_i \Leftrightarrow (\forall i \in J)\ y \in f(A_i) \Leftrightarrow (\forall i \in J)(\exists x_i \in A_i)$ $\Rightarrow$

$y = f(x_i)$

Fie $i_0 \in J \Rightarrow (\exists x_{i_0} \in A_{i_0})\ y = f(x_{i_0})$

$\Rightarrow (\forall i \in J)\ f(x_i) = y = f(x_{i_0}) \overset{f\text{-inj}}{\Longrightarrow} (\forall i \in J)\ \overset{\in A_i}{x_i} = x \Rightarrow$

$\Rightarrow (\forall i \in J)\ x_{i_0} \in A_{i_0} \Leftrightarrow x_{i_0} \in \bigcap_{i\in J} A_i \Rightarrow f(x_{i_0}) \in$

$\in f\left(\bigcap_{i\in J} A_i\right) \Leftrightarrow y \in f\left(\bigcap_{i\in J} A_i\right) \Rightarrow$ "$\supseteq$" $\Rightarrow$ "$=$"

Temă: 1) $T$-mulț., $T \neq \emptyset$; $A, B \in \mathcal{P}(T)$,

$\forall X \in \mathcal{P}(T)$) $\quad \overline{X} := T \setminus X$

$f : \mathcal{P}(T) \to \mathcal{P}(A) \times \mathcal{P}(B)$,

$(\forall X \in \mathcal{P}(T))\ f(X) = (\overset{\in\mathcal{P}(A)}{X\cap A}, \overset{\in\mathcal{P}(B)}{X\cap B}) \in \mathcal{P}(A)\times\mathcal{P}(B)$

Arie că: (a) $f$ inj. dacă $A \cup B = T$

(b) $f$ surj. $\Leftrightarrow A \cap B = \emptyset$

(c) $f$ bij. $\Leftrightarrow A = \overline{B} \Leftrightarrow B = \overline{A}$