

$\rightarrow x \in A \text{ si } x \notin B$  ~~contradictorie~~  $\Rightarrow x \in \bar{A} \Rightarrow \bar{B} \subseteq \bar{A} \Rightarrow$  (no) order,  
 $A \subseteq B \rightarrow x \in B$

$$\text{Deci } A \subseteq B \Rightarrow \bar{B} \subseteq \bar{A} \xrightarrow{(*)} \begin{cases} A \cap \bar{B} = \emptyset \\ B \cap \bar{A} = \emptyset \end{cases} \xrightarrow{(*)} \bar{A} \subseteq \bar{B} \Rightarrow A \subseteq B$$

$$A \subseteq B \Leftrightarrow \bar{B} \subseteq \bar{A}$$

$$(e) A = B \Leftrightarrow \begin{cases} A \subseteq B & (a) \Rightarrow \bar{B} \subseteq \bar{A} \\ B \subseteq A & (a) \Rightarrow \bar{A} \subseteq \bar{B} \end{cases} \Leftrightarrow \bar{A} = \bar{B}$$

$$(a) (c) \Rightarrow (b)$$

$$(b) \overline{A \cap B} = \bar{A} \cup \bar{B}$$

$$\bar{A} = A$$

$$\overline{A \cup B} \stackrel{(c)}{=} \overline{\overline{\overline{A \cup B}}} \stackrel{(a)}{=} \overline{\bar{A} \cap \bar{B}} \stackrel{(c)}{=} \overline{\overline{A \cap B}}$$

$$(f) A \setminus B = A \cap \bar{B}$$

For  $x$  elem arb, fixat

$$x \in A \cap \bar{B} \Leftrightarrow x \in A \text{ si } x \notin B = T \setminus B$$

$$\Leftrightarrow x \in A \text{ si } x \in T \text{ si } x \notin B \Leftrightarrow x \in A \text{ si } x \notin B \Leftrightarrow x \in A \setminus B \Rightarrow$$

$$\rightarrow A \cap \bar{B} \stackrel{(A \subseteq T)}{=} A \setminus B$$

$$g) A \cap B = \emptyset \Leftrightarrow A \subseteq \bar{B}$$

$$(A \cap B = \emptyset \Leftrightarrow (\forall x) x \in A \cap B \Leftrightarrow (\forall x) (x \in A \text{ si } x \in B))$$

$$A \cap B = \emptyset \stackrel{(c)}{\Leftrightarrow} A \cap \bar{\bar{B}} = \emptyset \Leftrightarrow A \setminus \bar{B} = \emptyset \Leftrightarrow (\forall x) (x \in A \setminus \bar{B}) \Leftrightarrow$$

$$\downarrow (f)$$

$$A \setminus \bar{B}$$

$$\Leftrightarrow (\forall x) (x \notin A \setminus \bar{B}) \Leftrightarrow (\forall x) \text{ non } (x \in A \text{ si } x \notin \bar{B}) \Leftrightarrow (\forall x) (x \notin A \text{ si } x \in \bar{B}) \Leftrightarrow$$

$$\Leftrightarrow (\forall x) (x \in A = x \in \bar{B}) \Leftrightarrow A \subseteq \bar{B}$$

$$[(\text{non } p) \text{ sau } q] \Leftrightarrow [p \Rightarrow q]$$