

性 5.3:

pf: (1)  $\checkmark$

$$(2) \text{ 已知 } A \subset B \quad \text{则 } \bar{A} = A \cup A', \quad B = B \cup B'$$

$$\therefore \bar{A} \subset \bar{B}$$

$$(3) \quad \overline{A \cap B} = (A \cap B) \cup (A \cap B)' \stackrel{(1.3.43)}{=} (A \cap B) \cup (A' \cup B') = (A \cup A') \cup (B \cup B') = \bar{A} \cup \bar{B}$$

$$\therefore A \cap B \subset A, \quad A \cap B \subset B$$

$$\Rightarrow \overline{A \cap B} \subset \bar{A}, \quad \overline{A \cap B} \subset \bar{B}$$

$$\Rightarrow \overline{A \cap B} \subset \bar{A} \cap \bar{B}.$$

$$(4) \quad \bar{\bar{A}} = \bar{A} \cup (\bar{A})' = \bar{A} \cup (A \cup A')' \quad [1.3.43 (3)]$$

$$= A \cup A' \cup (A')' \quad [1.3.43 (4): (A')' \subset A \cup A']$$

$$= A \cup A' = \bar{A}$$

$$\therefore ((A')' \cup (A \cup A')) = A \cup A'$$