

(性质 6.3)

pf: (1) \checkmark

(2) 已知 $A \subset B$, 则 $B^c \subset A^c$ 由性质 5.3 知 $\overline{B^c} \subset \overline{A^c}$

由定理 6.1 知: $(B^c)^c \subset (A^c)^c \Rightarrow A^o \subset B^o$

$$(3) (A \cap B)^o = \underbrace{(\overline{(A \cap B)^c})^c}_{\text{De Morgan 律}} = \underbrace{(\overline{A^c \cup B^c})^c}_{\text{性质 5.3}} = \underbrace{(\overline{A^c} \cap \overline{B^c})^c}_{\text{De Morgan}} = \underbrace{(A^o \cap B^o)^c}_{\text{定理 6.1}}$$

$$A \subset A \cup B \Rightarrow A^o \subset (A \cup B)^o$$

$$B \subset A \cup B \Rightarrow B^o \subset (A \cup B)^o \Rightarrow A^o \cup B^o \subset (A \cup B)^o$$

$$(4) (A^o)^o = \underbrace{(\overline{(A^o)^c})^c}_{\text{定理 6.1}} = \underbrace{(\overline{(\overline{A^c})^c})^c}_{\text{定理 6.1}} = \underbrace{(\overline{A^c})^c}_{\text{性质 5.3}} = \underbrace{(A^c)^c}_{\text{定理 6.1}} = A^o$$