Theorem (2.2.5). *Let A be a subset of U. $\overline{\overline{A}} = A$.*

Proof. Suppose x is an element in $\overline{\overline{A}}$. By the definition of set complementation $x \in \neg\overline{A}$, and of course by the same reasoning $x \in \neg(\neg A)$. By the logical law of double negation $x \in A$. Thus it follows directly that $\overline{\overline{A}} = A$. ∎