Theorem (2.2.37a). *Let A be a subset of the universal set U. $A \oplus A = \emptyset$.*

Proof. By Theorem 2.2.35, $A \oplus A = (A \cup A) - (A \cap A)$. By the set idempotent law, that is $A - A$, and by Theorem 2.2.19, equivalent to $A \cap \overline{A}$. It follows immediately from the set complementation law that $A \oplus A = \emptyset$. $\blacksquare$