

Theorem (2.2.7a). *Let A be a set with universal set U . U dominates set union such that $A \cup U = U$.*

Proof. Let x be an element in $A \cup U$. By the definition of set union, $(x \in A) \vee (x \in U)$. Regardless of the truth value for $x \in A$, we know $x \in U$ is always true because U is the universe. Therefore by logical domination $(x \in A) \vee (x \in U) \equiv x \in U$. It directly follows from the definitions that $A \cup U = U$. Thus proves the set domination law for the union of sets. ■