Definition 1. Let κ be a cardinal and $Y \subset \kappa$. Y is *cofinal in* κ iff for every $x \in \kappa$ there exists a $y \in Y$ such that $x < y$. Let a *cofinal subset of* κ stand for a subset of κ that is cofinal in κ.

Proposition 2. $\emptyset$ is cofinal in 0.

Proposition 3. Let n be a nonzero finite cardinal. Then n has no cofinal subset.

Proof. Assume the contrary. Consider a cofinal subset Y of n. We have $\mathrm{pred}(n) \in n$. Hence we can take a $y \in Y$ such that $\mathrm{pred}(n) < y$. Then $y \geq n$. Contradiction. ■