

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 $\text{pred}(n) \in n$. Hence we can take a $y \in Y$ such that $\text{pred}(n) < y$. Then $y \geq n$. Contradiction. ■