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empty set

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Synonym	null set

An *empty set* is a set \emptyset that contains no elements. The Zermelo-Fraenkel Axioms of set theory imply that there exists an empty set. One constructs an empty set by starting with any set X and then applying the axiom of separation to form the empty set $\emptyset := \{x \in X \mid x \neq x\}$.

An empty set is a subset of every other set, and any two empty sets are equal. Alternative notations for the empty set include $\{\}$ and \varnothing .