

Proof For Feedback

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Please write your best written proof of the following theorem. You will be graded on logic as well as writing.

Theorem 1. *Let X be a set with n elements. Let $\mathcal{P}(X)$ be its power set. Let $f : \mathcal{P}(X) \rightarrow \mathcal{P}(X)$ be the function defined by $f(Y) = X - Y$ (that's set minus). Then f is bijective.*

Hint: Please try working out examples like $f(\{1, 2\}) = \{3\}$ for $X = \{1, 2, 3\}$ and similar examples to get a feel for the function before you try to prove this.