Let f be a function from A into X, and let Y, Z be proper subsets of X. How do I prove the inverse function of X = A and the inverse function of (Y') = the inverse function of (Y)".

As there is a function

$$g(A): A \rightarrow X$$

There must be inverse function

$$f(X) = g^{-1}(A): X \rightarrow A$$

As Y is a subset of X then

$$f(Z) = g^{-1}(A): Z \rightarrow A, Z \in X$$

$$f(Y) = g^{-1}(A): Y \rightarrow A, Y \in X$$

But as

$$Y, Z \in X$$

Then f(Z) and f(Y) exist.