Let $f \in E^E \mid f \circ f = f$. Proove that:
1. f is injective $\Rightarrow f = id_E$;
2. f is surjective $\Rightarrow f = id_E$;

$\forall (x, x') \in E^2, f(x) = f(x') => x = x'$ and $f \circ f = f$
$\Rightarrow \forall x' \in E,\ \forall x = f(x') \in E, f(x) = x$ and $(\forall \alpha \in E\ ,\ \alpha \neq x => f(x) \neq f(\alpha)\ )$
$\Rightarrow \forall x \in E, f(x) = x$

$\forall y \in E,\ \exists x \in E \mid f(x) = y$ and $f \circ f = f$
$\Rightarrow f(y) = y, \forall y \in E$