A function $f : A \to B$ is one-to-one if different elements of $A$ map to different elements of $B$. That is, formally, if $a, b \in A$ and $a \neq b$ then $f(a) \neq f(b)$ (or, equivalently, if $f(a) = f(b)$ then $a = b$).

A function $f : A \to B$ is onto if every element of $B$ has an element of $B$ that maps to it. That is, formally, for every $b \in B$ there is an $a \in A$ with $f(a) = b$.

A function $f : A \to B$ is a bijection if it is one-to-one and onto.

For functions $f : A \to B$ and $g : B \to C$, define their composition $g \circ f : A \to C$ as $g(f(x))$.

1. For functions $f : A \to B$ and $g : B \to C$, if $g \circ f$ is onto, show $g$ is onto.