1. Prove that if f and g are functions that are increasing on an interval I, then the function $f + g$, defined by $(f + g)(x) = f(x) + g(x)$, is also increasing on I.

2. Let $h \colon \mathbb{R} \to \mathbb{R}$ be increasing over all of $\mathbb{R}$. Assume that its inverse h^{-1} relation is also a function, with domain $\mathbb{R}$. Prove that h^{-1} is also increasing over all of $\mathbb{R}$.