Theorem (2.3.25)**.** *Let f be a function $f : \mathbb{R} \implies \mathbb{R}$ defined by $f(x) = |x|$. $f(x)$ is not invertible.*

Proof. Let x be a postive real number. $f(x) = y$ and $f(-x) = y$. If f had an inverse then $f^{-1}(y) = x$ or $f^{-1}(y) = -x$, so f^{-1} is not a function by definition. Which concludes the proof. ■