Theorem (2.3.24)**.** *Let f be the function $f : \mathbb{R} \implies \mathbb{R}$ defined by $f(x) = e^x$. $f(x)$ is not invertible.*

Proof. The inverse function of $f(x) = e^x$ is $f(x)^{-1} = \log_e x$. But logarithmic functions are undefined for negative-valued domains. Thus, $f(x)$ is not bijective, and $f(x)$ is not invertible. ■