Brandon M. Keltz An Introduction to Computational Science by Allen Holder and Joseph Eichholz Chapter 3 - Approximation September  $13,\ 2022$ 

Problem 4. Show that if  $X \sim \mathcal{N}(\mu, \sigma^2)$ , then  $Z = \frac{X-\mu}{\sigma}$  is a standard normal variable.

Proof.