

72. Let  $X \sim N(0, 1)$ . Compare probabilities of the Empirical Rule to those from Chebyshev's Inequality.

Chebyshev's Inequality: Let  $X$  be a random variable and let  $g(x)$  be a non-negative function. Then, for any  $r > 0$

$$P(g(X) \geq r) \leq \frac{E[g(X)]}{r}.$$