

$$\begin{aligned}\Phi(1) - \Phi(-1) &= \Phi(1) - (1 - \Phi(1)) = 2\Phi(1) - 1 \\ &\approx 2(0.84) - 1 = 1.68 - 1 = 0.68\end{aligned}$$

$$\text{Let } Y = X_1 + X_2 + \dots + X_n$$

$$E[Y] = E\left[\sum_{i=1}^n X_i\right] = \sum_{i=1}^n E[X_i] = \sum_{i=1}^n \mu = n\mu$$

$$\text{Var}(Y) = \text{Var}\left(\sum_{i=1}^n X_i\right) = \sum_{i=1}^n \text{Var}(X_i) = \sum_{i=1}^n \sigma^2 = n\sigma^2$$

$$\sigma_Y = \sqrt{\text{Var}(Y)} = \sqrt{n\sigma^2} = \sigma\sqrt{n}$$