

Quiz Problem 1  
Due Feb. 4th, 11:59 pm EST

**Problem.**

Let  $X_1, \dots, X_N \stackrel{iid}{\sim} N(\mu, \sigma^2)$ . Define

$$Y_n = \mathbb{1}(X_n > \mu).$$

What is the distribution of  $Z = \sum_{n=1}^N Y_n$ ?

□