Worksheet 18

1. Let $X \sim N(4, 10^2)$. What is the probability that X is greater than 20?

2. Let $X \sim N(1, 3^2)$. What is the probability that X is between than 0 and 5?

3. Let $X \sim N(0, \sigma^2)$. What is the probability that X is greater than 3σ?

4. Let $X \sim Bin(100, 0.2)$. Using a normal approximation, estimate the probability that X is between 10 and 25.

5. Let $X_1, \ldots, X_n \sim_{i.i.d.} N(\mu, 1)$. If n is equal to 16 what is the probability that $\bar{X}$ is more than 0.1 away from μ? What if n is equal to 100?