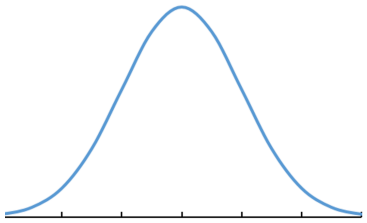
Name: _____
Date: _____

Unit 6 Quiz

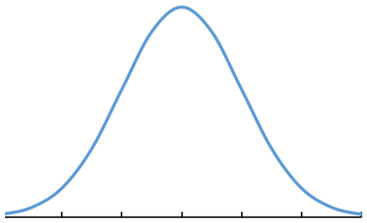
Answer the following questions. **Show your work!**

1) Let the random variable X represent the height of elephants. Suppose this follows a normal distribution with mean $\mu = 75$ ft and standard deviation $\sigma = 18$ ft. I am going to randomly select an elephant from this population.

   a) What is the probability X is less than 79 ft?



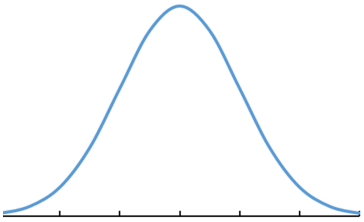
   b) What is the value for the 25th percentile of heights?



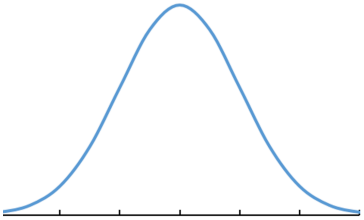
2) Using the elephant population information from problem (1), I am going to take a sample of size *n = 20* elephants.

   a) Find the parameters of the distribution of sample mean heights, $\bar{X}$.

b) What is the probability a sample mean height is greater than 85 ft?



c) What is the probability a sample mean height is between 63 ft and 80 ft?



3) Suppose 55% of CSCC students of own a Mac laptop ($p = 0.55$) and I am going to take a sample $n = 50$ students.

a) Find the parameters of the distribution of sample proportion of students who own Macs, $\hat{p}$.

b) What is the sample proportion for the top 25%?