1. The lengths of newborn kittens are normally distributed with a mean of 6 inches and a standard deviation of 1.2 inches. Many random samples of 36 lengths are obtained over various times and the sample mean lengths \( \bar{x} \) are recorded.

(a) What is the distribution of all possible sample means \( \bar{x} \) from samples of size 36?

(b) What is the probability that a sample mean \( \bar{x} \) is from 5.85 to 6.25 in?

(c) Use a \( z \)-score to write the bounds that contain 90% of all \( \bar{x} \) from samples of size 36.