1. The central limit theorem tells us that regardless of the population distribution as sample size increases the sampling distribution of the mean becomes

(a) more shaped like the population distribution.
(b) more normally distributed with a smaller range of values.
(c) more normally distributed with a larger range of values.
(d) more skewed to the right.

2. The central limit theorem states that the mean of the sampling distribution of the mean is equal to the population

(a) standard deviation.
(b) mean.
(c) mean divided by the population standard deviation.
(d) standard deviation divided by the square root of the sample size n.

3. True/False The value of the standard deviation of the sampling distribution of the mean is always greater than the standard deviation of the population. No relationship between the two quantities (μx and √x).

4. A manufacturer of automobile batteries claims that the distribution of the lengths of life of its best battery is ~ N(54 months, 6 months). Describe the sampling distribution of the mean lifetime of a sample of 50 batteries.

\[ \bar{x} \sim N \left( 54, \frac{6}{\sqrt{50}} \right) \]

The sampling distribution of \( \bar{x} \) is approximately normal with mean 54 and standard deviation 0.85.