14-5

Practice

Sample Sets of Data

Find the standard error of the mean for each sample. Then find the interval about the sample mean that has a 1% level of confidence and the interval about the sample mean that has a 5% level of confidence.

1. $\sigma = 50, N = 100, \overline{X} = 250$

2. $\sigma = 4, N = 64, \overline{X} = 100$

3. $\sigma = 2.6, N = 250, \overline{X} = 50$

4. $\sigma = 4.3, N = 375, \overline{X} = 110$

The table below shows a frequency distribution of the time in minutes required for students to wash a car during a car wash fundraiser. The distribution is a random sample of 250 cars. Use the table for Exercises 5-10.

Number of Minutes	5	6	7	8	9	10
Frequency	2	4	5	1	8	5

5. What is the mean of the data in the frequency distribution?

6. Find the standard deviation of the data.

7. Find the standard error of the mean.

8. Find the interval about the sample mean such that the probability is 0.90 that the true mean lies within the interval.

9. Find the interval about the sample mean such that the probability is 0.95 that the true mean lies within the interval.

10. Determine the interval about the sample mean that has a 1% level of confidence.