

Margin of Error & Confidence Intervals Homework

1. A sociologist found that in a sample of 49 retired men, the average number of jobs they had during their lifetimes was 7.2. The standard deviation of the sample was 2.1. Find the 90% confidence interval of the mean for the number of jobs a man had during his lifetime.
2. A researcher found that female shoppers spend an average of 18.6 minutes per visit at a grocery store, with a sample standard deviation of 5 minutes. Find the 90% confidence interval of the mean time a female spends grocery shopping.
3. An insurance company is trying to estimate the average number of sick days that full-time food service workers use per year. A pilot study found the standard deviation to be 2.5 days. How large of a sample must be selected if the company wants to be 95% sure of getting an interval that contains the true mean with a maximum error of 1 day?
4. A health care professional wishes to estimate the birth weights of infants. How large a sample must she select if she desires to be 90% confident that the true mean is within 6 ounces of the sample mean? The standard deviation of the birth weights is known to be 8 ounces.
5. A study of 50 adults from a certain population showed the mean diastolic blood pressure to be 72 millimeters of mercury (mmHg) and the population standard deviation to be 11.6. Find the 90% confidence interval of the true mean of the population.
6. The average weight of 60 randomly selected compact automobiles was 2627 pounds. The sample standard deviation was 400 pounds. Find the 99% confidence interval of the true mean weight of the automobiles.
7. How large a sample is necessary to be 95% sure that the estimate of the mean income of draftsmen is within \$200 of the true mean? The standard deviation of income is \$800.