1. For a population with a mean of µ=60 and a standard deviation of σ=24, find the z-score corresponding to each of the following samples.
2. M=63 for a sample of n=16 scores
3. M=63 for a sample of n=36 scores
4. M=63 for a sample of n=64 scores
5. A population of scores forms a normal distribution with a mean of µ=40 and a standard deviation of σ=12.
6. What is the probability of randomly selecting a score less than X=34?
7. What is the probability of selecting a sample of n=9 scores with a mean less than M=34?
8. What is the probability of selecting a sample of n=36 scores with a mean less than M=34?
9. The population of SAT scores forms a normal distribution with a mean of µ=500 and a standard deviation of σ=100. If the average SAT score is calculated for a sample of n=25 students,
10. What is the probability that the sample mean will be greater than M=510. In symbols, what is p(M>510)?
11. What is the probability that the sample mean will be greater than M=520. In symbols, what is p(M>520)?
12. What is the probability that the sample mean will be between M=510 and M=520? In symbols, what is p(510<M<520)?
13. People are selected to serve on juries by randomly picking names from the list of registered voters. The average age is µ=39.7 years with a standard deviation of σ=12.4. A statistician randomly selects a sample of n=16 people who are currently serving on juries. The average age for the individuals in the sample is M=48.9 years.
14. How likely is it to obtain a random sample of n=16 jurors with an average age greater than or equal to 48.9?
15. Is it reasonable to conclude that this set of n=16 people is not a representative random sample of registered voters?