Lesson #10 · Topic 1G · Practice

Answer Key

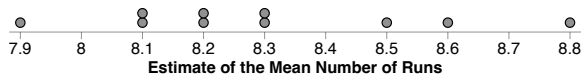
1. a. Label each customer with a unique number from 1 to 14,500. Use a random number generator to get 100 numbers between 1 and 14,500 with no repeats. Send the survey to each customer that corresponds to the numbers that are generated.
   b. Yes. Because the sample is a simple random sample, there is no guarantee that customers from Michigan will be represented in the sample.
   c. Select a stratified random sample, using the three states as the strata. With an SRS from each group, Amazon would ensure that customers from all three states will be represented in the sample.

2. a. By whether or not students are athletes. Opinions about the new proposed policy are more likely to be affected by whether or not a student is an athlete than their grade level.
   b. Split the student population into two groups: athletes and non-athletes. From the group of athletes, select an SRS. From the group of non-athletes, select an SRS. Combine all the selected students to form the stratified random sample.

3. a. It is possible that all 20 employees selected would be hourly wage employees (or all management salary employees).
   b. Homogeneous. All the employees within each group are similar in how they are being paid (all hourly wage or all management salary).
   c. 16 hourly wage employees and 4 management salary employees.

4. a. Using this sampling method, the estimates for the unemployment rate are not consistently above or consistently below the true unemployment rate.
   b. Using this sampling method, the estimates for the unemployment rate are consistently close to the true unemployment rate.

5. a. About 8.3 runs, because this is the center of the distribution.



   b. Answers will vary, but the dotplot should have approximately the same center (8.3 runs) and less variability.

6. C

7. B