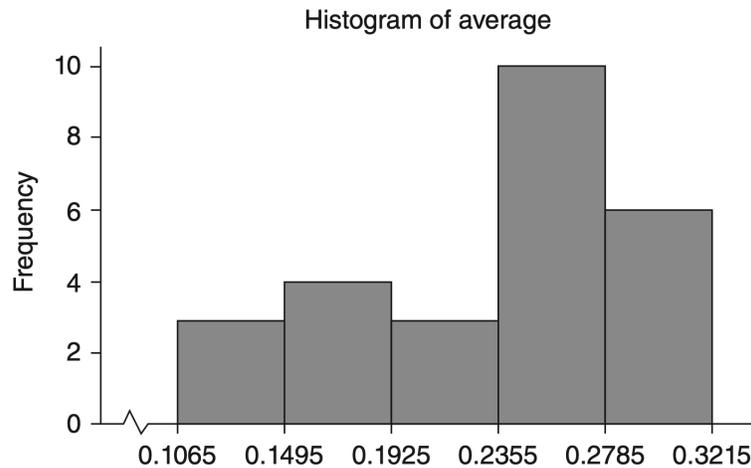


# Statistics Test 1

Number of questions—5

**Directions:** Solve each of the following problems using separate paper, while clearly indicating each problem number when solving. Irrelevant work will detract from your score, while answers without work shown will be awarded no credit. Answers with partially correct work will receive partial credit. Each problem is worth 20 points. You must work alone, but you may use a graphing calculator as a supplement to your own work if you indicate the steps used. You may not use a phone, computer, computational intelligence, AI, or other tools to assist you in solving the problems.

- Write the sample type that best fits each description. Choose from simple random, stratified, cluster, systematic, and convenience.
  - A teacher numbered all students in her classroom and then selected every third student after starting from a random number.
  - An administrator randomly selected two grade levels in a school to have all students in the selected grade levels checked for lice.
  - A bingo organizer rolled balls around in a drum and then drew 5 balls without looking.
  - A pollster asked everyone leaving a bodega to fill out a survey.
  - A manager divided his coworkers by their zip codes and then selected two employees from each zip code.
- Look at the histogram in the figure, which shows baseball batting averages for a random sample of National League players near the end of the baseball season. The data are from the baseball statistics section of the *Denver Post*.



- What distribution shape best describes this histogram?

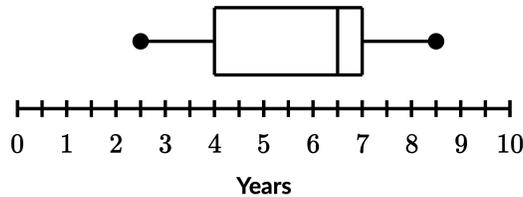
- (b) How many players have a batting average between 0.2785 and 0.3215?
  - (c) How many players were selected in total?
  - (d) What percentage of players have a batting average of 0.2355 or less?
3. With the age of cellphones, adults have relied on the use of text messages as a fast and efficient way to communicate. This has led many researchers to believe that more adults spend their time sending text messages rather than talking on their phone. A sample of 22 random adults was surveyed on the number of text messages they believe they send a day. This gave the following counts:

123   98   78   65   85   97   53   149   91   86   114  
 37   101   99   84   76   68   52   95   102   49   135

- (a) Make a stem-and-leaf display with the data. Be sure to indicate the scale.
  - (b) What distribution shape best fits the data? Explain your answer.
4. Given the sample data

36   52   31   41   45

- (a) Find the mean of the data.
  - (b) Find the variance of the data, rounded to the nearest hundredth.
  - (c) Find the standard deviation of the data, rounded to the nearest hundredth.
  - (d) Find an interval in which at least 75% of the data fall.
5. Here is a box plot that summarizes ages of young turtles in a conservation program.



- (a) Find the range of the data.
- (b) Find the interquartile range of the data.
- (c) Find the median of the data.
- (d) What percent of turtles are older than 7?