Test Prep Exam 1

1. A questionnaire is sent out to academic social scientists who are members of a national association. For each of the following elements of the survey, are the responses best described as Interval, Nominal, or Ordinal scale?
   a. Gender __________
   b. Age __________
   c. Annual Salary __________
   d. Do you favor union organizations (strongly oppose, oppose, neutral, favor, strongly favor) __________

2. For the following questions, fill in the blank.
   a. The _____________ rule states that __________ of the observations fall between two standard deviations from the _____________.
   b. A ____________ summarizes a sample.
   c. The ____________ summarizes the population.

3. For the following questions answer True or False.
   a. Sampling error refers to when the subjects give incorrect responses to survey questions. __________
   b. The number of dogs in a kennel is a discrete random variable. __________
   c. All large samples are approximately normally distributed. __________
   d. Volunteer sampling, convenience sampling, stratified sampling, and snowball sampling are all types of probability sampling. __________
   e. The sample standard deviation can be affected by a small number of extreme outliers, while the inter-quartile range will not be. __________
   f. Interval > nominal > ordinal __________
4. Are the following variables continuous or discrete?
   a. 2.454
   b. 4,593,837
   c. 3432422 ½
   d. Weight
   e. Drinks

5. Find the Q1, Q2, Q3, and the IQR for the following: 15, 12, 10, 18, 19, 21, 21, 14

6. Find Q1, Q2, Q3, and the IQR for the following: 45, 48, 52, 56, 41, 43, 55
7. What sampling plan was used in the following scenarios?
   a. Random samples of scientists were taken from each classification of highest degree offered by college (Associates, Bachelors, Masters, Doctorate)
   b. A phone directory is obtained, and from a random starting name, every 200th member is sampled.

8. We asked a sample of Tarleton students how many pounds they gained their freshman year. Here are their responses: 3.1, 12.7, 7.7, 4.3, 1.8, 6, 3.5, 15.4. Find 2 standard deviations.
9. The data set below gives the amount of time (in hours) of several students at the library per week. Give 68%.

   4, 1, 8, 12, 2, 2, 6, 5, 7, 15

10. Eight friends scored the following grades on their end-of-year math exam:
    23, 37, 45, 49, 56, 70, 72, and 100. What was the mean and standard deviation of their scores?
11. What is the range, median, and mode for the stem and leaf plot below?

<table>
<thead>
<tr>
<th>Stem</th>
<th>Leaf</th>
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<tbody>
<tr>
<td>1</td>
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<td>2 9</td>
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