Quiz 1

Please show your work in all the problems to get full credit.

Problem 1: Determine whether the given value is a statistic or a parameter

(1) Volunteers in Grayton Beach, FL identified the average (mean) number of hatchlings in all 45 Loggerheads turtle nests.
   PARAMETER

(2) A sample of Sidewinder, or Horned, Rattlesnakes is found to have an average (mean) length of 26 inches.
   STATISTIC

(3 pts (1.5 each))

Problem 2: Determine whether the given values are from a discrete or a continuous data set.

(1) A sample of male Bighorn sheep has an average (mean) horn base circumference of 39.1 centimeters.
   Continuous Data Set

(2) The produce of Better Health Foundation manages the campaign advocating consumers to eat 5 Fruits and Vegetables A Day for Better Health.
   Discrete Data Set

(3 pts (1.5 each))

Problem 3: Determine which of the four levels of measurements is most appropriate.

(1) Doctors measure the weights (in pounds) of pregnant women. What type of data is collected? A) Nominal. B) Ordinal. C) Interval. D) Ratio
   D) Ratio

(2) The income range of attendees at a research conference is gathered as upper, middle, and low levels. What type of data is collected? A) Nominal. B) Ordinal. C) Interval, D) Ratio.
   B) Ordinal

(3 pts (1.5 each))

Problem 4: Determine the type of sampling used: systematic, convenience, stratified, or cluster
(1) Biologists studying the pH level of state waterways obtain a sample of streams from a randomly generated list by selecting every 5th stream on the list.

**Systematic Sampling**

(2) To conduct a study of Johnson & Johnson shareholder attitudes, a list of shareholder zipcodes is compiled. All shareholders from 20 different zipcodes are selected to be surveyed.

**Cluster Sampling**

(2 pts (1 each))

**Problem 5:** Identify the type of observational study:

(1) Climatologists studying global warming record the average (mean) temperature of the Earth and the change in size of the ice caps during the next 75 years.

**Prospective**

(2) Geneticists studying the biodiversity of roses collect data from reports classifying the number of varieties during the past 50 years.

**Retrospective**

(2 pts (1 each))

**Problem 6:** Use the frequency distribution to answer the next questions. A sample of 80 juvenile salmon is grouped into the resulting frequency distribution based on their weights.

<table>
<thead>
<tr>
<th>Weight (in grams)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-149</td>
<td>15</td>
</tr>
<tr>
<td>150-199</td>
<td>10</td>
</tr>
<tr>
<td>200-249</td>
<td>30</td>
</tr>
<tr>
<td>250-299</td>
<td>25</td>
</tr>
</tbody>
</table>

(1) Identify the class width, the class midpoints, and the class boundaries.

**Class width:** 50

**Class midpoints:** 124.5, 174.5, 224.5, 274.5

**Class Boundaries:** 99.5, 149.5, 199.5, 249.5, 299.5

(2) Construct a corresponding histogram for the weights of the juvenile salmon.

(7 pts (4 and 3))