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) In studying the Loggerhead turtle on Anna Maria Island, FL, scientists observe the average (mean) number of hatchlings in all 184 nests.
   - PARAMETER

(2) A sample of Medtronic’s rechargeable implanted spine stimulator batteries lasted an average (mean) of eight years.
   - STATISTIC

(3 pts (1.5 each))

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

(1) The number of hatchlings from a sample of 48 bluebird nests is 138.
   - Discrete Data Set

(2) A sample of Dall sheep is measured to have an average (mean) horn length of 32.3 inches.
   - Continuous 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 preterm babies. What type of data is collected? A) Nominal. B) Ordinal. C) Interval. D) Ratio
   - D) Ratio

   - C) Interval

(3 pts (1.5 each))

**Problem 4:** Determine the type of sampling used: systematic, convenience, stratified, or cluster

(1) To obtain a sample of diabetics, a graduate student contacts nearby hospitals for a list of names.
Convenience Sampling

(2) Biologists divide the regions where Red foxes are found into the Nearctic, Palearctic, Oriental, Ethiopian, and the Australian region. They plan to follow 100 female foxes from each region to find the average (mean) number of their offspring.

Stratified Sampling

Problem 5: Identify the type of observational study:

(1) A researcher from the department of defense is studying the psychology of trauma. He plans to follow the children of service members who died in Afghanistan for the next 15 years.

Prospective

(2) Scientists studying the migration habits of Aleutian geese collect data from reports measuring the number of geese during "fly-offs" over the past 10 years.

Retrospective

Problem 6: Use the frequency distribution to answer the next questions. A sample of 272 log jams found in river channels in the Northwest U.S. is grouped into the resulting frequency distribution based on the width of the channel in which the log jams were found.

<table>
<thead>
<tr>
<th>Width of Channel</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4m</td>
<td>103</td>
</tr>
<tr>
<td>5-9m</td>
<td>82</td>
</tr>
<tr>
<td>10-14m</td>
<td>49</td>
</tr>
<tr>
<td>15-19m</td>
<td>16</td>
</tr>
<tr>
<td>20-24m</td>
<td>16</td>
</tr>
<tr>
<td>25-29m</td>
<td>6</td>
</tr>
</tbody>
</table>

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

Class width: 5
Class midpoints: 2, 7, 12, 17, 22, 27
Class Boundaries: -0.5, 4.5, 9.5, 14.5, 19.5, 24.5, 29.5

(2) Construct a corresponding histogram for the widths of the channels.
(7 pts (4 and 3))