Review for Final Statistics Day 8

1) Which of the following phrases is an example of qualitative data?

A) a person's height

B) a person's IQ

C) a person's marital status

D) a person's annual income
State whether the given phrase represents quantitative or qualitative data.

3) a person's middle name

5) Which of the following data sets is univariate?

A) The number of years of college attended and an individual's annual income.

B) The shoe size for each girl on a youth soccer team.

C) The number of hours studying and scores on the SAT.

D) The number of hours spent exercising and the amount of weight lost.
7) Which of the following data sets is univariate?

A) The distance a car traveled and the amount of gas used.

B) The SAT scores of the students in Mrs. Roberts's class.

C) The number of people in a family and the weekly grocery bill.

D) The age of a person and the amount of sleep he needs.

9) Assume you want to determine the 3 most popular flavors of ice cream among 300 sixth-grade students at a school, without having to ask every single student. Which of the following sampling techniques would provide the most unbiased sample, and therefore, the most accurate results?

A) selecting the first 30 students getting off a particular school bus.

B) randomly selecting 5 sixth grade students from the list of 300 students

C) randomly selecting 30 sixth grade students from the list of 300 students

D) asking all the students in a boys' gym class
11) Paula needs a mean (average) score of 91 on four tests to earn a midterm grade A. If the mean of her scores for the first three tests was 89, what is the lowest score on a 100-point scale that she can receive on the fourth test to have a midterm grade of A?

\[
\frac{89 + 89 + 89 + x}{4} = 91 \\
\frac{267 + x}{4} = 91 \\
267 + x = 364 \\
x = 97
\]

13) The table below represents the distribution of the ages of neighborhood children. What interval contains the median?

<table>
<thead>
<tr>
<th>Ages</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-18</td>
<td>5</td>
</tr>
<tr>
<td>13-15</td>
<td>8</td>
</tr>
<tr>
<td>10-12</td>
<td>4</td>
</tr>
<tr>
<td>7-9</td>
<td>6</td>
</tr>
<tr>
<td>4-6</td>
<td>2</td>
</tr>
<tr>
<td>1-3</td>
<td>5</td>
</tr>
</tbody>
</table>

A) 13 - 15  
B) 7 - 9  
C) 10 - 12  
D) 4 - 6
15) For the group of data 3, 3, 6, 7, and 16, which of the following is true?

A) mean > median

\[
\text{mean} = \frac{3 + 3 + 6 + 7 + 16}{5} = \frac{35}{5}
\]

B) mode = mean

C) median < mode

D) median = mean

17) A small company recorded the number of hours each of their 21 part-time employees worked during one week. The hours employees worked were:

14, 22, 13, 2, 7, 13, 18, 29, 19, 15, 9, 16, 23, 12, 17, 28, 20, 4, 18, 8, 24

<table>
<thead>
<tr>
<th>Interval (in hours)</th>
<th>Frequency</th>
<th>Interval (in hours)</th>
<th>Cumulative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 - 30</td>
<td>2</td>
<td>0-30</td>
<td>21</td>
</tr>
<tr>
<td>21-25</td>
<td>3</td>
<td>0-25</td>
<td>19</td>
</tr>
<tr>
<td>16-20</td>
<td>5</td>
<td>0-20</td>
<td>16</td>
</tr>
<tr>
<td>11-15</td>
<td>3</td>
<td>0-15</td>
<td>11</td>
</tr>
<tr>
<td>6-10</td>
<td>3</td>
<td>0-10</td>
<td>5</td>
</tr>
<tr>
<td>0-5</td>
<td>2</td>
<td>0-5</td>
<td>2</td>
</tr>
</tbody>
</table>

b) What interval in the frequency table contains the median number of hours worked?
C) Construct a cumulative frequency histogram using the data from the appropriate table.

19) Given the following data:
34, 30, 41, 40, 29, 31, 42, 36

Which of the following is the box and whisker graph for this data?
21) Given the data in the chart below.

<table>
<thead>
<tr>
<th>x</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

Determine a line of best fit.

\[ y = \frac{m}{x} + b \]

\[ y = 2x + 0 \]

or \[ y = -2x \]

23) Make a scatter plot for the set of data below, then determine a line of best fit.

<table>
<thead>
<tr>
<th>x</th>
<th>3</th>
<th>7</th>
<th>15</th>
<th>31</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>15</td>
<td>18</td>
<td>28</td>
<td>37</td>
</tr>
</tbody>
</table>

\[ y = 0.7913043478x + 12.92173913 \]