MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Classify the variable as categorical or quantitative.

1) A monthly electric bill in dollars
   A) Categorical  B) Quantitative

Identify potential outliers, if there are any, in the given data.

2) The test scores of 15 students are listed below.
   37  55  48  65  67
   69  71  73  74  77
   80  82  87  90  99
   A) 37   B) 37, 99  C) 37, 55  D) 99  E) None

Provide an appropriate response.

3) A newspaper surveyed its subscribers as to which section of the paper they read first. The results are listed below.

<table>
<thead>
<tr>
<th>Section</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front page</td>
<td>18.3</td>
</tr>
<tr>
<td>Sports</td>
<td>25.2</td>
</tr>
<tr>
<td>Business</td>
<td>13.9</td>
</tr>
<tr>
<td>Comics</td>
<td>22.1</td>
</tr>
<tr>
<td>Horoscope</td>
<td>13.8</td>
</tr>
</tbody>
</table>

What percent of subscribers read a section of the paper not listed above first?
   A) 3.2%  B) 6.7%  C) 7.8%  D) 5.7%  E) 4.2%
4) A survey of patients at a hospital classified the patients by gender and blood type, as seen in the table.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Blood type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>A</td>
<td>105</td>
</tr>
<tr>
<td>B</td>
<td>97</td>
</tr>
<tr>
<td>O</td>
<td>160</td>
</tr>
<tr>
<td>AB</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

What percent of all patients are male? Round your answer to the nearest tenth of a percent.

A) 53.0%  B) 53.6%  C) 47.7%  D) 53.3%  E) 46.7%

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

For the description of data, identify the W's.

1) A statistics student with an interest in astrology looked at the grade point averages of all 892 students that enrolled at a small college in Pennsylvania in 2001. She determined that GPA was not related to the month that students were born.

Provide an appropriate response.

2) Explain the difference between a frequency distribution and a relative frequency distribution. For a given set of data, will the shapes of the frequency distribution and the relative frequency distribution be the same?

Would you expect a distribution of the variable to be uniform, unimodal, or bimodal? Explain why.

3) Heights of a group of professional athletes, half of whom are gymnasts and half of whom are basketball players
Answer Key

Testname: UNTITLED1

1) B
   ID: STATDM1D 2.1.2-4
   Diff: 0   Page Ref: 7-11
   Objective: (2.1) Classify Variable as Categorical or Quantitative

2) A
   ID: STATDM1D 5.1.6-1
   Diff: 0   Page Ref: 57-69
   Objective: (5.1) Identify Outliers

3) B
   ID: STATDM1D 3.1.1-1
   Diff: 0   Page Ref: 15-25
   Objective: (3.1) Interpret Relative Frequency Table

4) A
   ID: STATDM1D 3.1.2-1
   Diff: 0   Page Ref: 15-25
   Objective: (3.1) Interpret Contingency Table

1) Who: 892 college students; what: GPA, month of birth; where: Pennsylvania; when: 2001; how: not clear, but note that the data is for all enrolling students; why: apparently an interest in astrology that made the student curious about whether birth month is related to GPA.
   ID: STATDM1D 2.1.1-1+
   Diff: 0   Page Ref: 7-11
   Objective: (2.1) +Identify the W’s

2) Answers will vary. Possible answer: A frequency distribution displays counts, while a relative frequency distribution displays percentages. For a given set of data, the frequency distribution and the relative frequency distribution both have the same shape but have different scales on the vertical axis.
   ID: STATDM1D 3.1.5-1
   Diff: 0   Page Ref: 15-25
   Objective: (3.1) +Know Concepts: Displaying Categorical Data

3) Answers will vary. Possible answer: The distribution would probably be bimodal. The population consists of two distinct groups. The basketball players are likely to be significantly taller than the gymnasts. There will be two peaks in the distribution, one at the average height of the gymnasts and one at the average height of the basketball players.
   ID: STATDM1D 4.1.1-1
   Diff: 0   Page Ref: 36-46
   Objective: (4.1) +Describe Distribution as Uniform/Unimodal/Bimodal