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

Provide an appropriate response. Round relative frequencies to thousandths.

1) True or False: Relative frequency is the proportion (or percent) of observations within a category and is found using the formula: relative frequency = \( \frac{\text{sum of all frequencies}}{\text{frequency}} \).

A) True \hspace{1cm} \text{B) False}

The bar graph shows the number of tickets sold each week by the garden club for their annual flower show.

![Bar graph showing tickets sold each week]

2) During which week was the fewest number of tickets sold?

A) week 4 \hspace{1cm} \text{B) week 5} \hspace{1cm} \text{C) week 2} \hspace{1cm} \text{D) week 6}

Provide an appropriate response.

3) The payroll amounts for 26 major-league baseball teams are shown below. Approximately what percentage of the payrolls were in the $20-$30 million range? Round to the nearest whole percent.

![Payroll graph]

A) 10\% \hspace{1cm} \text{B) 59\%} \hspace{1cm} \text{C) 11\%} \hspace{1cm} \text{D) 38\%}
4) Given the bar graph shown below, the Pareto chart that would best represent the data should have 
the bars in the following order.

The pie chart shows the percentage of votes received by each candidate in the student council presidential election. Use 
the pie chart to answer the question.

Who got the fewest votes?
A) Ted  
B) Lili  
C) Matt  
D) Ben

Provide an appropriate response.
6) The class width is the difference between 
   A) The upper class limit and the lower class limit of a class 
   B) Two successive lower class limits 
   C) The high and the low data values 
   D) The largest frequency and the smallest frequency
7) Determine the number of classes in the frequency table below.


<table>
<thead>
<tr>
<th>Class</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>42-43</td>
<td>7</td>
</tr>
<tr>
<td>44-45</td>
<td>2</td>
</tr>
<tr>
<td>46-47</td>
<td>6</td>
</tr>
<tr>
<td>48-49</td>
<td>4</td>
</tr>
<tr>
<td>50-51</td>
<td>1</td>
</tr>
</tbody>
</table>

A) 5  B) 6  C) 2  D) 20

8) A researcher records the number of employees of each of the IT companies in the town of Westmoore. The results are summarized in the table.


<table>
<thead>
<tr>
<th>Number of Employees</th>
<th>Number of IT Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 249</td>
<td>33</td>
</tr>
<tr>
<td>250 - 499</td>
<td>22</td>
</tr>
<tr>
<td>500 - 749</td>
<td>8</td>
</tr>
<tr>
<td>750 - 999</td>
<td>7</td>
</tr>
<tr>
<td>1000 - 1249</td>
<td>7</td>
</tr>
</tbody>
</table>

Find the class width.
A) 1249  B) 5  C) 249.5  D) 250

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

Construct the specified histogram.

9) For the data below, construct a frequency distribution and a relative frequency distribution.


<table>
<thead>
<tr>
<th>Height (in inches)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 - 52</td>
<td>5</td>
</tr>
<tr>
<td>53 - 55</td>
<td>8</td>
</tr>
<tr>
<td>56 - 58</td>
<td>12</td>
</tr>
<tr>
<td>59 - 61</td>
<td>13</td>
</tr>
<tr>
<td>62 - 64</td>
<td>11</td>
</tr>
</tbody>
</table>

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

Provide an appropriate response.

10) What is the difference between a bar chart and a histogram?
A) The bars in a bar chart may be of various widths while the bars of a histogram are all the same width.
B) There is no difference between these two graphical displays.
C) The bars on a bar chart do not touch while the bars of a histogram do touch.
D) The bars in a bar chart are all the same width while the bars of a histogram may be of various widths.
11) For the stem-and-leaf plot below, what are the maximum and minimum entries? 

```
1 | 78
1 | 6 6 6 7 8 9
2 | 0 1 1 2 3 4 4 5 6 6
2 | 7 7 8 8 9 9 9
3 | 0 1 1 2 3 4 4 5 5
3 | 6 6 7 8 8 9 9
4 | 5 8
```

A) max: 38; min: 7  
B) max: 48; min: 17  
C) max: 45; min: 17  
D) max: 47; min: 18

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

Construct a stem-and-leaf plot for the data.

12) The number of home runs that Mark McGwire hit in the first 13 years of his major league baseball career are listed below. (Source: Major League Handbook) Construct a stem-and-leaf plot for this data.

```
3  49 32 33 39 22 42 9 9 39 52 58 70
```

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

Describe the shape of the distribution.

13)

A) skewed to the right  
B) bell shaped  
C) uniform  
D) skewed to the left

Use the histograms shown to answer the question.

14)

Is either histogram symmetric?

A) Neither is symmetric.  
B) The second is symmetric, but the first is not symmetric.  
C) Both are symmetric.  
D) The first is symmetric, but the second is not symmetric.
Explain what is misleading about the graphic.

15) The volume of our sales has doubled!!!
   A) The length of a side has doubled, but the area has been unchanged.
   B) The length of a side has doubled, but the area has been multiplied by 4.
   C) The graphic is not misleading.
   D) The length of a side has doubled, but the area has been multiplied by 8.

16) 2012 DUI Figures for State County

A) The graphic may give the impression that drivers over age 65 had no DUI's in 2012.
B) The graphic is not misleading.
C) The graphic only includes information for one year.
D) The horizontal scale does not begin at zero.
Answer Key
Testname: UNTITLED1

1) B
2) C
3) D
4) B
5) C
6) B
7) A
8) D
9) C

10) C
11) B
12) 0 | 3 9 9
    1 |
    2 | 2
    3 | 2 3 9 9
    4 | 2 9
    5 | 2 8
    6 |
    7 | 0

13) A
14) A
15) B
16) A