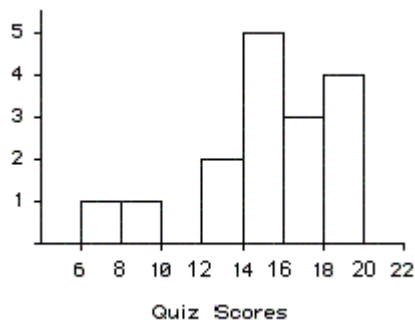
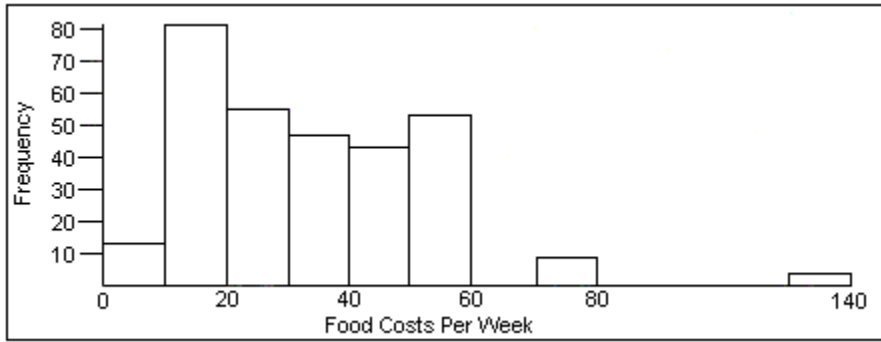


## DATA REPRESENTATION

1. Scores for a quiz were calculated as the number of correct responses. Below is a graphical display of the quiz scores. How many students have scores above 15? (Note: all scores are integers and bars begin at left endpoints)



- 6
- 7
- 12
- 13
- Can't be determined.
2. In order to determine which kind of data display (e.g., histogram versus bar graph) is appropriate for a given variable, one should consider which of the following:
- whether the relevant variable is quantitative or categorical
  - whether the study is observational or experimental
  - the range of the data
3. A class survey asked students to indicate if they are MAC or PC users. Of the following graphs, which is most appropriate to display their results?
- Pie chart
  - Histogram
  - Either a pie chart or a histogram
  - None of the above
4. A college statistics class conducted a survey. They gathered data from a large random sample of students who estimated how much money they typically spent each week in different categories (e.g., food, entertainment, etc.). A distribution of the survey results is presented below. One student claims the distribution of food costs basically looks bell-shaped, with one outlier. How would you respond?



Agree, it looks pretty symmetric if you ignore the outlier.

Agree, most distributions are bell-shaped.

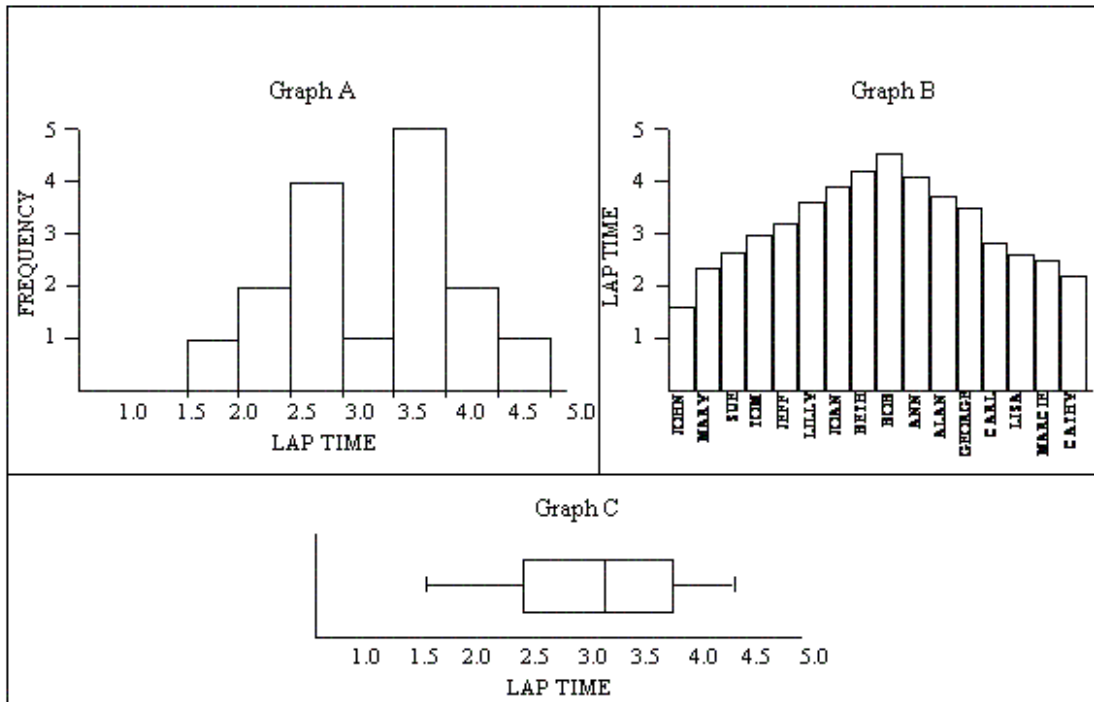
Disagree, it looks more skewed to the left.

Disagree, it looks more skewed to the right.

Disagree, it looks more bimodal.

**Items 5 and 6 refer to the following situation:**

A local running club has its own track and keeps accurate records of each member's individual best lap time around the track, so members can make comparisons with their peers. Here are graphs of these data.



5. Which of the above graphs allows you to most easily estimate the median running time.

Graph A.

Graph B.

Graph C.

All of the above.

6. Which of the above graphs allows you to most easily see the shape of the distribution of running times?

Graph A.

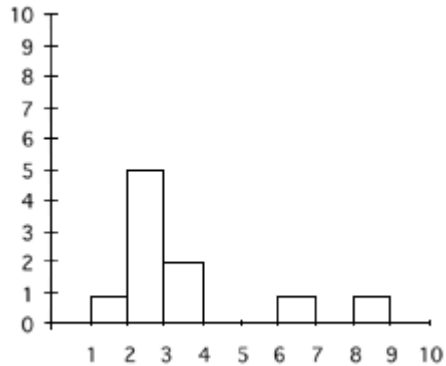
Graph B.

Graph C.

All of the above.

**Items 7 to 9 refer to the following situation:**

Here is a histogram for a set of test scores from a 10-item makeup quiz given to a group of students who were absent on the day the quiz was given.



7. What do the numbers on the vertical axis represent?

Independent variable

Scores on the test

Dependent variable

Number of Students

8. How many people received scores higher than 4?

1

2

3

4

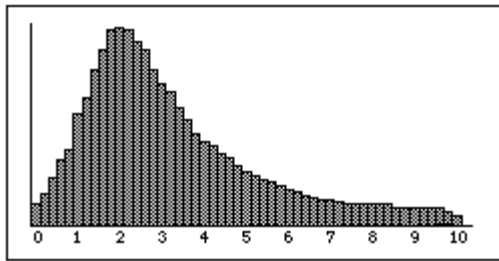
9. How many people took the test and have scores represented in the graph?

5

10

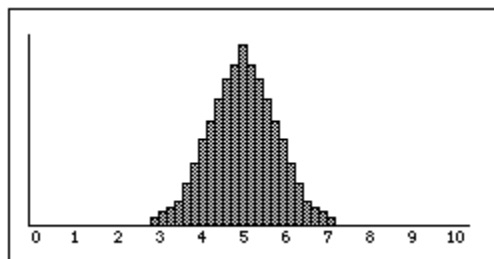
20

10. Select the description that best represents the shape of the following distribution.



- Left (negatively) skewed
- Right (positively) skewed
- Normal leaning right
- Normal leaning left

11. Select the description that best represents the shape of the following distribution.



- Normal
- Skewed
- Bimodal
- Uniform

**Items 12 and 13 refer to the following situation:**

One of the items on the student survey for an introductory statistics course was "Rate your aptitude to succeed in this class on a scale of 1 to 10" where 1 = Lowest Aptitude and 10 = Highest Aptitude. The instructor examined the data for men and women separately. Below is the distribution of this variable for the 30 women in the class.

12. How should the instructor interpret the women's perceptions regarding their success in the class?

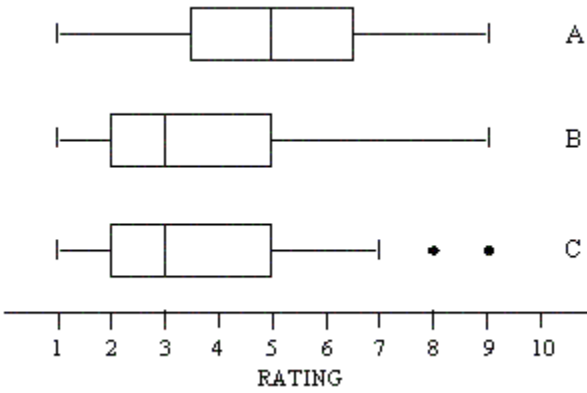


A majority of women in the class do not feel that they will succeed in statistics although a few feel confident about succeeding.

The women in the class see themselves as having lower aptitude for statistics than the men in the class.

If you remove the three women with the highest ratings, then the result will show an approximately normal distribution.

13. Which of the following boxplots represents the same data set as the histogram shown above?



Graph A.

Graph B.

Graph C.