Shape

Name: _____ **Date:** _____

1. The table gives a frequency table for the lifetime of 50 watt halogen light bulbs made by Absolute Electric.

lifetime hours	Number of light bulbs
300–399	2
400–499	1
500–599	6
600–699	12
700–799	13
800–899	7
900–999	2
1000–1100	7

   a) What is the percentage of bulbs whose lifetimes are less than 700 hours.

   b) What is the percentage of bulbs whose lifetime is greater than 800

   c) What percentage of bulbs whose lifetime is greater than 500 hours but less than 800 hours

   d) Draw a histogram of the data.

2. April surveys her class to determine the number of siblings for each student. What is the most appropriate method for displaying her data?

   A. broken-line graph B. circle graph

   C. bar graph D. pictograph

3. The final grades for a mathematics class of 50 students are recorded in the table.

85,	83,	69,	79,	66,	86,	88,	72,	63,	90
57,	55,	75,	65,	79,	90,	67,	69,	89,	71
81,	91,	87,	63,	67,	84,	66,	66,	65,	76
69,	81,	86,	76,	87,	75,	78,	82,	67,	83
91,	82,	55,	69,	66,	64,	64,	65,	62,	60

   Make a stem-and-leaf table and find the following:

   a) the highest grade

   b) the lowest grade

   c) the range of the grades

   d) the grades of the five highest ranking students

   e) the grades of the five lowest ranking students

   f) the grade of the student ranking tenth highest

   g) the number of students who received grades of 80% or better

   h) the numbers of students who received grades below 75%.

   i) the number of students who received grades higher than 67 but not higher than 83.

4. The stem-and-leaf plot below displays the distribution of the number of points Central High School scored in each of its 15 football games this season. Selected summary statistics are also given.

2	0 3 4
3	3 4 7 7 7
4	0 1 3 5 9
5	6 8

Key: 2|0 = 20

Mean	38.5
StDev	11.1
Min	20
Q_1	33
Median	37
Q_3	45
Max	58

Which of the following is the best description of this distribution?

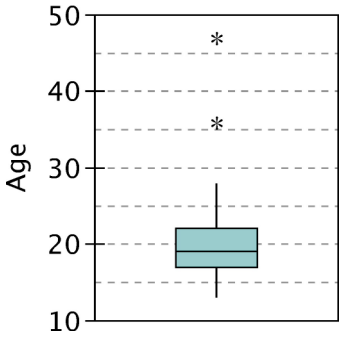
A. The number of points scored is approximately symmetric and unimodal. The center is best summarized by the median number of points scored (M = 37 points) and the spread is best summarized by the range in number of points scored (R = 38 points).

B. The number of points scored is approximately symmetric and unimodal. The center is best summarized by the mean number of points scored ($\bar{x}$ = 38.5 points) and the spread is best summarized by the standard deviation of number of points scored (s = 11.1 points).

C. The number of points scored is strongly skewed right. The center is best summarized by the median number of points scored (M = 37 points) and the spread is best summarized by the range in number of points scored (R = 38 points).

D. The number of points scored is strongly skewed right. The center is best summarized by the mean number of points scored ($\bar{x}$ = 38.5 points) and the spread is best summarized by the standard deviation of number of points scored (s = 11.1 points).

5. An insurance company monitors accidents at rock concerts. When someone is injured while dancing in a mosh pit, "moshing", the company collects information about the victim. A boxplot of the victims' ages is shown below, along with some statistical data about the ages.



N	Mean	SE Mean	StDev	Min	Q1	Median	Q3	Max
66	20.136	0.628	5.099	13.000	17.000	19.000	22.000	47.000

Describe the shape of the distribution.

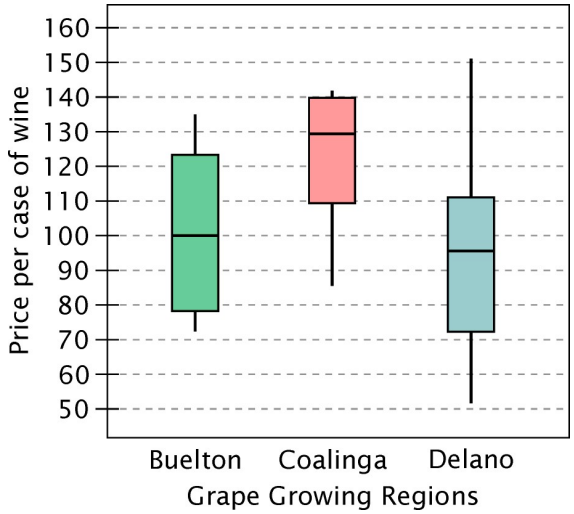
A. Skewed to the left

B. Skewed to the right

C. Like a normal curve

D. Distribution with outliers

6. The boxplots below show the price per case of wine (in dollars) for three different grape growing regions.



Which price distribution is clearly skewed to the left?

A. Buelton

B. Coalinga

C. none of them

D. two or more of them

7. This table shows the frequencies of the ages of American presidents at the time of inaugurations.

Age (years)	40–44	45–49	50–54	55–59	60–64	65–69
Frequency	2	7	13	12	7	3

The distribution can be described as _____ and _____.

I. unimodal

II. bimodal

III. multimodal

IV. uniform

V. skewed left

VI. skewed right

VII. symmetric