CHAPTER 3 ASSIGNMENT (13.3-13.5)

DESCRIBING DATA: FREQUENCY DISTRIBUTIONS AND GRAPHIC PRESENTATION

Name _____ Section _____ Score _____

Part I Select the correct answer and write the appropriate letter in the space provided

_____ **1.** A grouping of data into classes giving the number of observations in each class is called a(an)
- **a** bar chart.
- **b.** frequency distribution.
- **c.** pie chart.
- **d.** cumulative frequency distribution.

_____ **2.** The distance between consecutive lower class limits is called the
- **a.** class interval.
- **b.** frequency distribution.
- **c.** class midpoint.
- **d.** class frequency.

_____ **3.** The class midpoint is
- **a.** equal to the number of observations.
- **b.** found by adding the upper and lower class limit and dividing by 2.
- **c.** equal to the class interval.
- **d.** all of the above.

_____ **4.** The number of observations in a particular class is called the
- **a.** class interval.
- **b.** class frequency.
- **c.** frequency distribution.
- **d.** none of the above.

_____ **5.** A bar chart is used most often when
- **a.** you want to show frequencies as compared to total observations.
- **b.** you want to show frequencies by class intervals.
- **c.** you want to display frequencies by category.
- **d.** you want to organize data along certain time interval.

_____ **6.** In a *relative frequency* distribution
- **a.** the class frequencies are divided by 100.
- **b.** the data are related to each other rather than mutually exclusive.
- **c.** the class frequency is divided by the total number of observations.
- **d.** the frequencies are added together to give a relative set of numbers.

_____ **7.** For a line chart involving time in years and dollar values, the horizontal or *X*-axis would be used to represent
- **a.** the dollar variable.
- **b.** the time variable.
- **c.** the class interval.
- **d.** the class frequency.

_____ 8. The suggested interval size of the class intervals for a histogram can be estimated by:
- **a.** consecutive lower class limits divided by 2.
- **b.** consecutive lower class limits divided by the total number of observations.
- **c.** using the formulas: $i \geq \frac{H - L}{k}$
- **d.** consecutive lower class limits divided by the number of frequencies in each class.

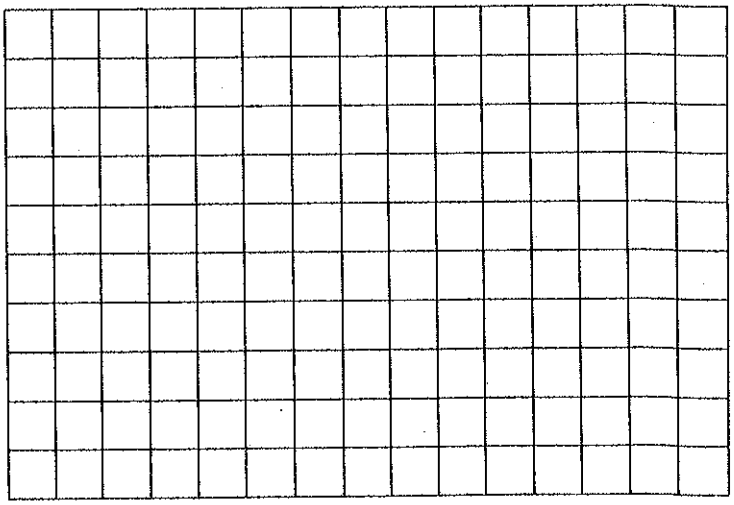
_____ 9. A pie chart requires at least what level of data?
- **a.** nominal
- **b.** ordinal
- **c.** interval
- **d.** ratio

_____ 10. A graphic representation of a frequency distribution constructed by connecting the class midpoints with lines is called a
- **a.** histogram.
- **b.** line chart.
- **c.** pie chart.
- **d.** frequency polygon.

Part II Show all of your work. Write the answer in the space provided.

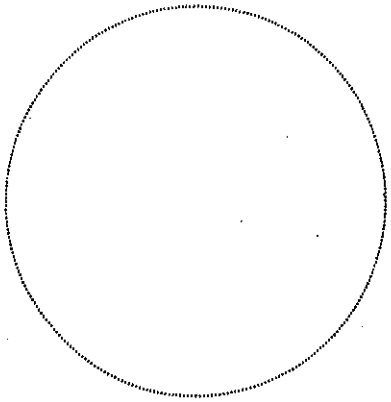
11. Shown below are the net sales for the J. M. Smucker Company, a leading marketer of jams and jellies. Use the data to construct a line graph.

Smucker's Net Sales	
Year	Sales (millions)
1989	345
1990	399
1991	425
1992	454
1993	462
1994	478
1995	511
1996	529
1997	524
1998	565
1999	602
2000	632
2001	651



12. The following is a breakdown of the expenditures of the Ohio Division of Wildlife for 2001. Construct a pie chart.

Category	Amount (millions)
Administration	2.5
Education	4.5
Law enforcement	3.4
Wildlife officers	6.5
Fish management	7.7
Wildlife management	9.5
Operations	6.3
Capital improvements	2.1

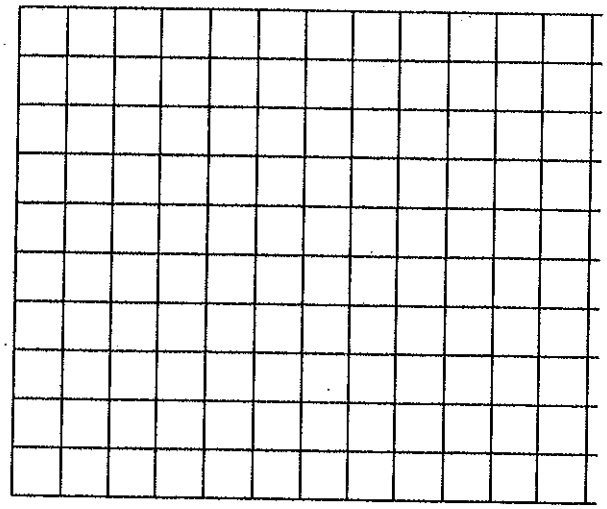


13. Listed are the weights of the 2002 Super Bowl Champion New England Patriots starting lineup, including the place kicker and the punter. Organize the data into

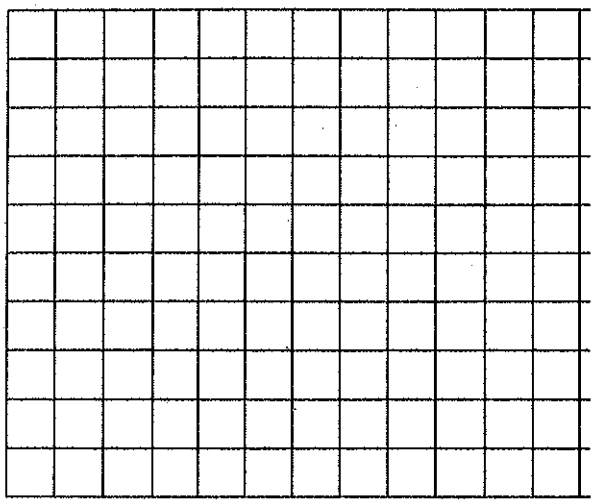
228	209	195	305	324	215
241	291	181	242	234	320
190	210	230	263	194	205
326	333	186	225	279	255

a. a frequency distribution

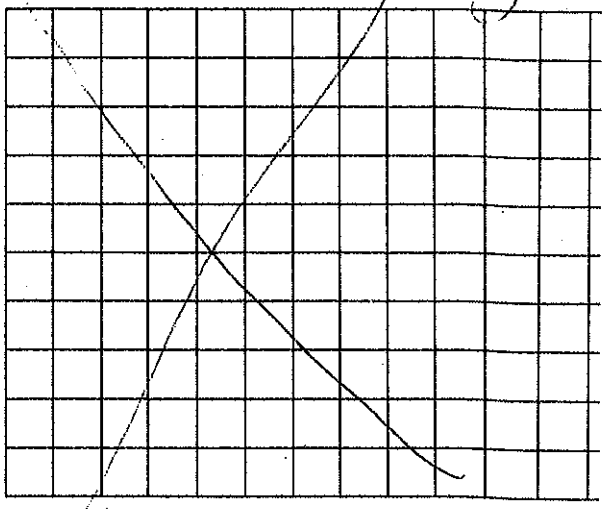
b. Draw a histogram for the data.



c. Develop a frequency polygon.



d. Draw a cumulative frequency polygon



14. The following stem and leaf plot shows the scores on a recent test of Pre-Calculus students.

STEM	LEAF
5	6 8
6	1 2 2 4 8
7	0 4 6 6
8	0 4 4 6 6 6 6
9	0 2 6
10	0

a. How many students took the test?

a.

b. What were the highest and lowest scores?

b.

c. How many students scored 70 or higher?

c.

d. What percent of the students scored lower than 70?

d.

Part II Find the answers to each of the following questions. Show essential calculations.

15 A study was conducted about the number of people running a red light at a particular intersection. The number of violators for a sample of seven days is:

6 12 7 12 8 4 5

a. Compute the sample mean.

a.

b. What is the median?

b.

c. What is the mode?

c.

d. Describe the skewness.

d.

16. A shipment of packages to the Solomon Company included 10 packages weighing 7.4 pounds, 12 weighing 8.2 pounds and 6 weighing 8.7 pounds. What value would you use as a typical amount for the weight of a package?

20.

17. The revenues of the top eleven personal computer manufacturers are given (in hundred millions).

15 17 23 26 27 35 72 88 91 98 102

a. Compute the range.

a.

b. Compute the mean deviation.

b.

c. Compute the standard deviation.

c.

d. Compute the quartiles and the median.

Q_1

Q_2

Q_3