

T102 CHAPTER 8 REVIEW

THIS IS ONLY A SAMPLING OF POSSIBLE QUESTIONS. BE SURE TO REVIEW ALL HOMEWORK AND CLASS NOTES.

Please note that on the answer key many graphs are not present. Also note that titles and labels of the appearing graphs are not present. This is due to the computer generation of the answerkey.

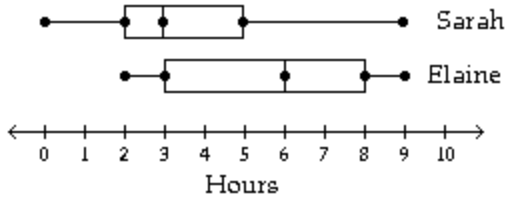
- 1) When given a set of data, it is very common to determine the **mean** and the **standard deviation**. Explain the difference between these two descriptive measures of a data set. That is, why do we need both?
- 2) What differences are there between the following two statements, and which one do you believe?
 - a. Drunk drivers cause about half of all fatal car crashes.
 - b. Of all fatal motor vehicle crashes, about 50% involve alcohol.
- 3) A college conducts a survey of its alumni in an attempt to determine the typical annual salary of its graduates. Name two factors that might influence the result.
- 4) A researcher published this survey result: "74% of people would be willing to spend 10% more for energy from a non-polluting source". The survey question was announced on a national radio show and 1,200 listeners responded by calling in. What is wrong with this survey?
- 5) The pH for patient's blood during one week is shown below:
7.49 7.25 7.25 7.15 7.49
 - a. Find the mean.
 - b. Find the mode **SHOW ALL WORK FOR EACH.**
 - c. Find the median
 - d. Find the range
 - e. Find the standard deviation for the data. Round to 4 decimal places.
- 6) If the mean of a set of 36 scores is 27 and two more scores of 40 and 42 are added, what is the new mean? Round to 3 decimal places.
- 7) On an English exam, the scores were as follows:
43 91 73 65 56 77 82 91 82 65 98 65 **SHOW ALL WORK FOR EACH.**
 - a. Find the mean.
 - b. Find the mode.
 - c. Find the median.
 - d. Find the range.
 - e. Find the standard deviation. (Round to 4 dps)
- 8) On a Statistics exam, the scores for the class are as follows:
74 74 77 77 75 68 65 77 67 66
SHOW ALL WORK FOR EACH.
 - a. Find the mean.
 - b. Find the mode.
 - c. Find the median.
 - d. Find the range.
 - e. Find the standard deviation. (Round to 3 decimal places)

- 9) The scores on a screening test for new technicians are normally distributed with a mean 100 and standard deviation of 18. Find the approximate percentage of applicants taking the test who score:
- Between 82 and 118
 - Over 136
 - Less than 100
 - More than 64
 - Less than 64 and more than 118.

- 10) The weekly record of reported accidents in a large auto assembly plant for the past 14 weeks are as follows:
 50 64 75 78 83 84 88 90 90 92 92 93 96 98
- Find Q_1
 - Find Q_2
 - Find Q_3
 - Find IQR
 - Determine any outliers (show work)
 - Construct the Box-and-Whisker plot of the data.

- 11) The quiz scores for Mrs. Happy's class are as follows:
 52 64 75 78 83 84 88 90 90 92 92 93 96 98
- Construct a line plot of the data.
 - Find Q_1 .
 - Find Q_2 .
 - Find Q_3 .
 - Find the Interquartile Range.
 - Construct a Box-and-Whisker plot of the data. Be sure to identify outliers, if any.

- 12) Following are box-and-whisker plots comparing the study times in hours per week for Sarah and Elaine.



- Which girl has the shortest study time? Of what value is it?
 - What are the median study times for both Sarah and Elaine?
 - What percent of Elaine's study times are greater than Sarah's median time?
 - Which girl has the smallest range? Of what value is it?
 - Which girl has the smallest Interquartile Range? Of what value is it?
- 13) On a History exam, the scores were as follows:
 86 95 97 96 55 90 94 82 68 77 88 89 85
 74 90 72 80 76 88 73 64 79 73 85 93
- Construct an ordered stem-and-leaf plot.
 - Construct a grouped frequency table with class intervals of width 5 beginning with the lowest score.
 - Construct a histogram with the data.

14) Along I-65 North, the following are the speeds of 25 vehicles.

86 65 75 66 55 90 74 82 68 77 88 89 85
74 70 72 80 76 58 73 64 79 73 85 59

- a. Construct a line plot of the data.
- b. Construct an ordered stem-and-leaf plot
- c. Construct a grouped frequency table with classes of width 7 beginning with the lowest speed.
- d. Construct a histogram of the data.

15) You scored a 75, 82, 88, and 79 on the first 4 exams in T101. What must you score on the 5th exam to have an average of an 82%?

16) Ann and David worked together to grade the exams from Ann's English class. Ann graded 20 papers and found that the mean of her group was an 85. David graded 15 papers and found that the mean of his group was a 78. What was the mean of the entire class?

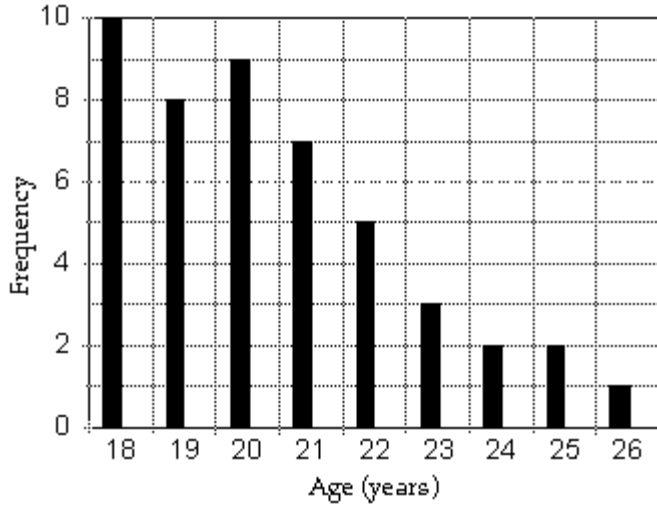
17) The number of male and female students in the College of Natural Science are listed below by major. Make a double bar graph for the data.

<u>Major</u>	<u>Number of Male Students</u>	<u>Number of Female Students</u>
Mathematics	100	50
Chemistry	100	200
Biology	150	200
Geology	150	100
Computer Science	75	125

18) Students in Mr. Mason's classes collected items from different countries. The data show how many of each item one class collected. Construct a bar graph for the frequency data.

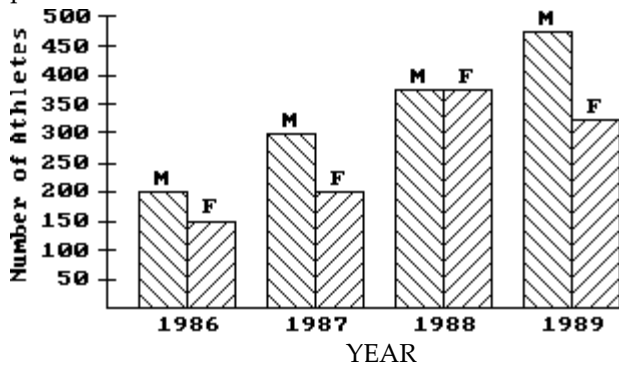
Stamps, 9
Postcards, 11
Coins, 7
Books, 13

19) The ages of people randomly surveyed on a college campus are summarized in the bar graph.



- How many people were surveyed?
- How many people were 19 years old?
- How many people were 20 years old or older?
- What age occurs most frequently?

20) This double-bar graph shows the number of male (M) and female (F) athletes at a university over a four-year period.



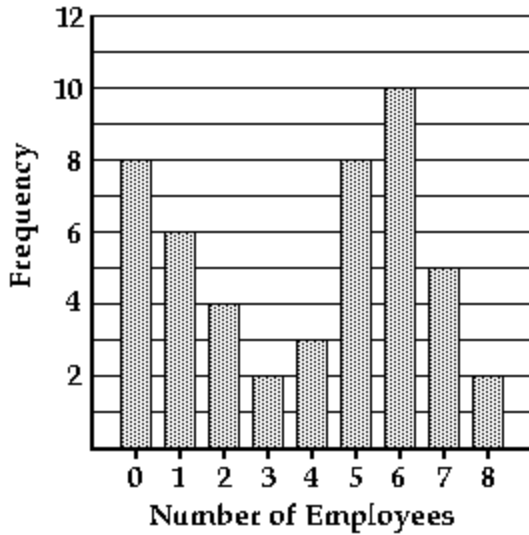
- Which year had the greatest number of male athletes?
- Which year had the smallest number of male athletes?
- What percentage of all students involved in athletics in 1989 was male? (Round to the nearest percent.)
- What is the only year in which the number of female athletes declined from its previous value?

21) The test scores of 40 students are listed below.

25	35	43	44	47	48	54	55	56	57	59	62	63	65
66	68	69	69	71	72	72	73	74	76	77	77	78	79
80	81	81	82	83	85	89	92	93	94	97	98		

Construct a box-and-whisker plot for the given data.

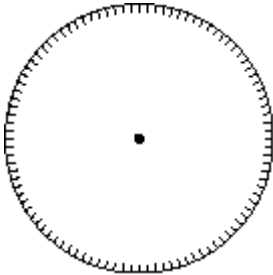
22)



The office manager at an accounting firm counted the number of employees that were in the coffee room each hour during the work week. The results are summarized in the following bar graph.

- Find the mean of the given data.
Round to the nearest tenth, if necessary.
- Find the median.
- Find the mode.

23)



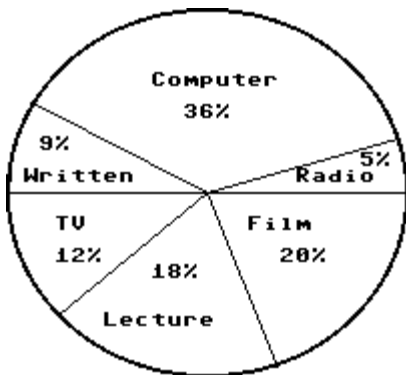
Use the information to complete a circle graph.

Note that the circle is divided into 100 equal sections.

Intended major of high school students:

Science:	32%
Social Science:	8%
Humanities:	20%
Business:	16%
Other:	24%

24) In a school survey, students showed these preferences for instructional materials. Answer the question



- About how many students would you expect to prefer computers in a school of 350 students?
- About how many students would you expect to prefer TV in a school of 400 students?
- How many degrees are in the central angle for 36%?

Answer Key

Testname: T102 CHAP8_REVIEW

- 1) The mean describes the centering of the data -- gives one value to describe the entire set.
The standard deviations describes how the data is dispersed or spread out.
- 2) The first statement implies fault and cause to the drinking of alcohol, whereas the second does not.
- 3) the response is only voluntary; graduates with low salaries may not respond; stay-at-home moms are extreme values with a salary of \$0; graduates who have moved may not repond or may not receive the survey; graduates who did not enjoy their college experience at that particular university may not respond.
- 4) What type of talk radio was this? A conservative show? A liberal show? The sample was biased to listeners of that station.
- 5) a. $\bar{x} = 7.326$
b. mode is 7.49 and 7.25
c. median = 7.25
d. range = .34
e. $s \approx .1388$
- 6) $\bar{x} = 27.737$
- 7) a. 74 b. 65 c. 75 d. 55 e. 15.3297
- 8) a. 72 b. 77 c. 74 d. 12 e. 4.669
- 9) a. 68% b. 2.5% c. 50% d. 97.5% e. 18.5%
- 10) a. 78 b. 89 c. 92 d. 14 e. 50 f. Answer cannot be displayed.
- 11) b. 78 c. 89 d. 92 e. 14 f. outlier of 52
- 12) a. Sarah, 0 hours b. Sarah, 3 hours and Elaine, 6 hours
c. 75% d. Elaine, 7 hours
e. Sarah, 3 hours

13) a.

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

b.

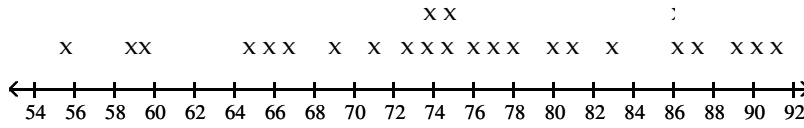
Group	Tallies	Frequency
55 - 59		1
60 - 64		1
65 - 69		1
70 - 74		4
75 - 79		3
80 - 84		2
85 - 89		6
90 - 94		4
95 - 99		3
	Total	25

c. Answer cannot be displayed.

Answer Key

Testname: T102 CHAP8_REVIEW

14) a.



b.

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

c.

Group	Tallies	Frequency
55 - 61		3
62 - 68		4
69 - 75		7
76 - 82		5
83 - 89		5
90 - 96		1
	Total	25

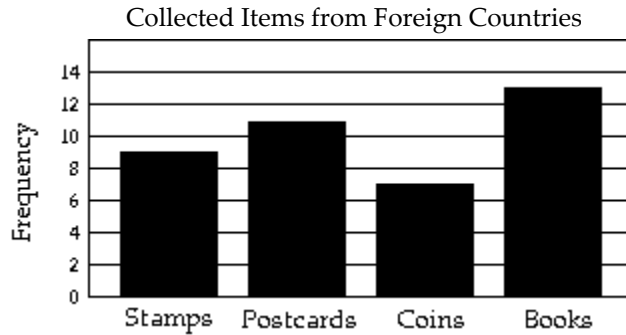
d. Answer cannot be displayed.

15) An 86%.

16) An 82%.

17) Answer cannot be displayed.

18)



19) a. 47

b. 8

c. 29

d. 18 years

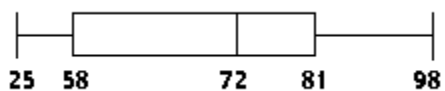
20) a. 1989

b. 1986

c. 59%

d. 1989

21)



Answer Key

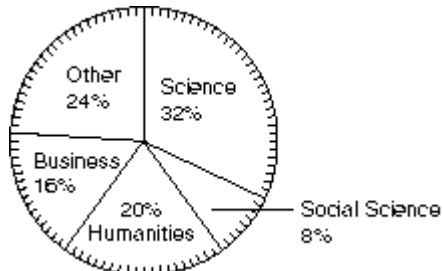
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22) Mean = 3.8 employees (3.8125 unrounded)

Median = 5 employees

Mode = 6 employees

23)



24) a. About 126 students

b. About 48 students

c. 129.6°