14 . 1 Organizing and Visualizing Data
M. Goodroe - Quantitative Skills and Reasoning

Objectives:

1. Explain the difference between a smaple and a population.
2. Organize data in a frequency table.
3. Use a variety of methods to represent data visually.
4. Use stem-and-leaf displays to compare data.

Key Terms:

Statistics
Data
Sample
Population
Bias
Qualitative data
Quantitative data
Frequency distribution
Frequency
Relative frequencies
Frequency table
Histogram
Stem-and-leaf display

Name:_____

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

Complete the frequency/relative frequency table for the data given.

1) Kevin asked some of his friends how many hours they worked during the previous week at their after-school jobs.

6 5 6 3 6 6 9 8 6 4 8 5

5 8 6 5 8 6 5 8 5 8 8 3

Hours	Frequency	Relative Frequency
3-4		
5-6		
7-8		
9-10		

Construct a bar graph as requested.

2) The table lists winners of the Wimbledon women's singles title for the years 1976–1995. Construct a bar graph for the relative frequency data.

Winner	Frequency	Relative frequency
C. Evert	2	0.10
V. Wade	1	0.05
M. Navratilova	9	0.45
C. Martinez	1	0.05
S. Graf	6	0.30
E. Goolagong	1	0.05
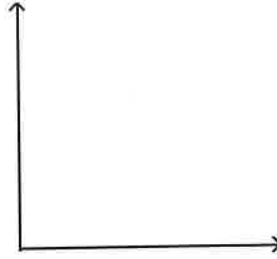
3) Students in Mr. Mason's classes collected items from different countries. The data show how many of each item c collected. Construct a bar graph for the frequency data.
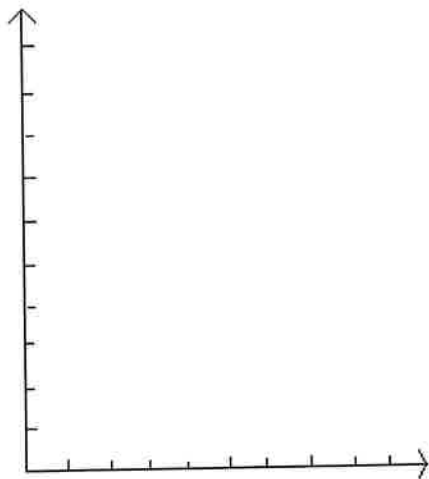
Rocks, 5
Stamps, 3
Money, 8
Photos, 13

Construct the specified histogram.

4) The frequency table below shows the number of days off in a given year for 30 police detectives.
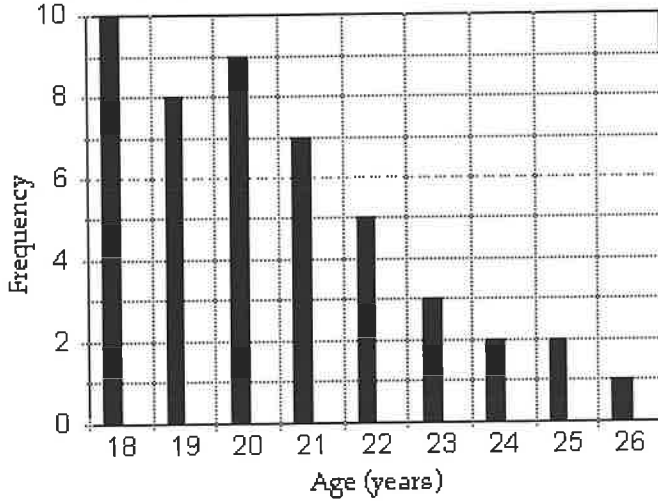
Days off	Frequency
0 – 1	10
2 – 3	1
4 – 5	7
6 – 7	7
8 – 9	1
10 or more	4

Construct a histogram.

Solve the problem.

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


How many people were surveyed?

Construct the specified histogram.

6) During the quality control process at a manufacturing plant, 142 finished items are randomly selected and weighed. The results are summarized in the frequency table below. Construct a relative-frequency histogram corresponding to the frequency table.

Weight (g)	Frequency
0.35 – 0.44	32
0.45 – 0.54	82
0.55 – 0.64	17
0.65 – 0.74	11
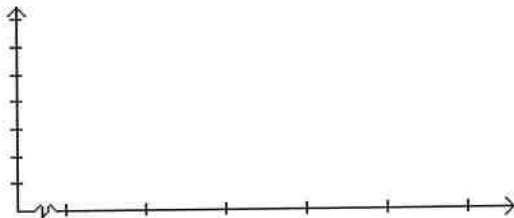
This double-bar graph shows the number of male (M) and female (F) athletes at a university over a four-year period. Answer the question.
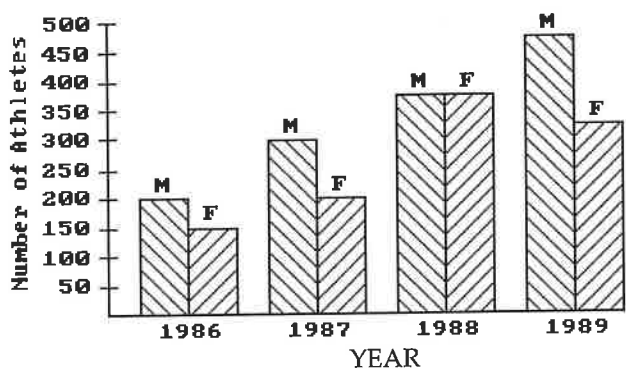
7) Which year had the greatest number of male athletes?

8) Which year had the smallest number of female athletes?

9) Which year had the smallest number of male athletes?

10) How many students were involved in athletics
in 1989?

Solve the problem.

11) A tennis promoter is comparing two brands of tennis ball to determine which one gives a faster serve. The following data represent the top speeds (in mph) clocked by comparable players using each ball. Represent the two sets of data on a single stem-and-leaf display. Which ball, if either, seems to give a faster serve?
Ball A: 86, 62, 61, 85, 91, 89, 94, 96,
75, 71, 92, 90, 70, 84, 82, 69

Ball B: 94, 94, 63, 74, 79, 61, 62, 75,
82, 70, 72, 87, 69, 67, 88, 66

12) A doctor is comparing two different drugs to determine which is more effective at lowering cholesterol. The following data represent, for each drug, the drop in cholesterol over a three-month period for comparable patients. Represent the two sets of data on a single stem-and-leaf display. Which drug, if either, seems to be mor effective?
Drug A: 21, 11, 25, 40, 34, 14, 33, 16,
31, 50, 11, 33, 44, 17, 30, 26

Drug B: 27, 42, 46, 37, 44, 32, 33, 53,
42, 29, 57, 54, 49, 48, 12, 26