

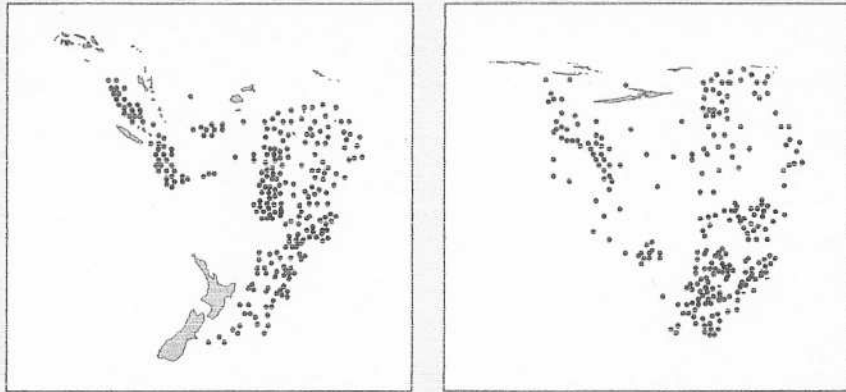
# 3-6

## Choosing a Data Display

### FOCUS

Tell why a data display is a good choice for a data set, choose a good data display for a data set.

For many years, scientists have used two-dimensional graphs of the locations of the epicenters of earthquakes. The one at the left below shows such a graph for earthquake epicenters in the Fiji Islands. Now, a computer graphic like the one at the right below can give a three-dimensional view which adds depth so that scientists can see how the epicenters are stacked on top of each other beneath the crust of the Earth. The viewing angle can be changed to provide even more information.



### UNDERSTANDING THE MAIN IDEAS

#### Deciding on a graph

Different kinds of graphs are appropriate for different kinds of data. Here are some general guidelines to follow.

- A *bar graph* is a good choice for displaying data that cannot be put in numerical order, such as types of pets or countries, or data that is in discrete categories, such as consecutive years or days.
- A *circle graph* is a good choice for showing relationships among parts of a whole, such as portions of a budget or fractions of the total student body.
- A *box-and-whisker plot* is a good choice for showing different data sets that relate to similar situations, such as sets of test scores or samples taken on different occasions.
- A *histogram* is a good choice for showing data that can be grouped in intervals, such as salary or price ranges.
- A *line graph* is a good choice for showing continuous data that changes over time, such as temperature changes or stock market trends.
- A *stem-and-leaf plot* is a good choice for displaying small sets of data that can be grouped in intervals, such as test scores for a small group of students or salaries for employees of a small business.

Remember that these are only guidelines; more than one type of graph might be appropriate for the same data set.

## Sample

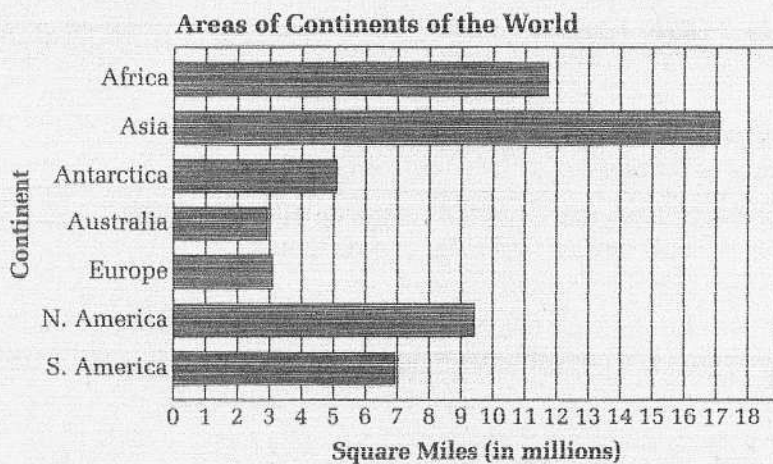
Use the information in the table below.

- Make a graph showing the areas of the continents.
- Make a graph showing the percentage of the total area occupied by continent.

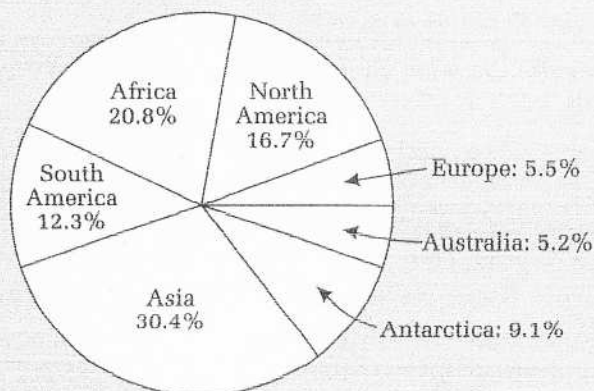
Continent	Area (million square miles)	Percent of total area
Africa	11.7	20.8%
Asia	17.1	30.4%
Antarctica	5.1	9.1%
Australia	2.9	5.2%
Europe	3.1	5.5%
North America	9.4	16.7%
South America	6.9	12.3%

## Sample Response

- Since the categories are discrete, a bar graph is a good choice for displaying the area data.



- Since the percents are parts of 100%, a circle graph is a good choice for displaying the percentages.



For Exercises 1–3, tell what type of graph you think is a good choice for displaying each data set. Explain your choice.

- the population growth of the United States during the years 1890–1990
- the amount of time each day you spend on different activities, such as going to school, sleeping, playing sports, and so on
- the size of each of the grades at your school
- The table below shows the areas of the oceans of the world in millions of square miles. Graph the data using (a) a bar graph and (b) a circle graph.

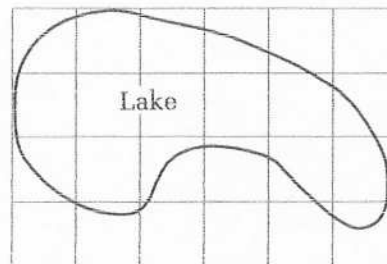
Ocean	Antarctic	Arctic	Atlantic	Indian	Pacific
Area (million square miles)	7.6	4.8	31.5	28.4	63.8

Review **PREVIEW**

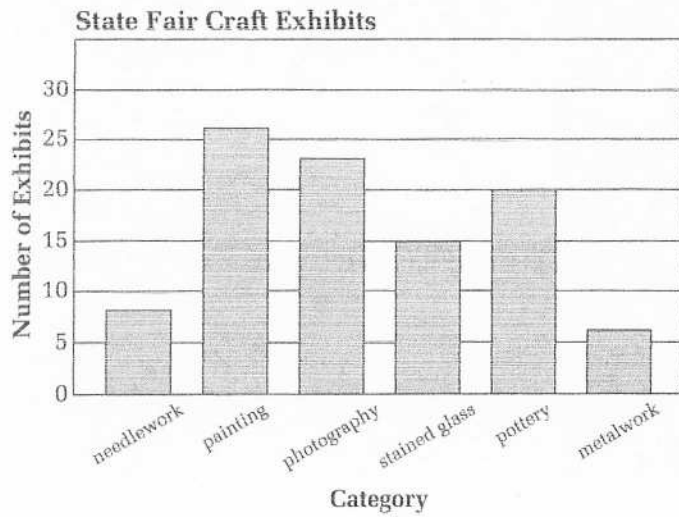
- Make a box-and-whisker plot of the data in the table. (Section 3-5)

Basketball Players' Heights (in inches)			
Chuck	81	Doc	79
Red	72	Clyde	80
Pete	76	Patrick	85
Scottie	83	Ervin	82
Shawn	81	Lon	82
Mike	74	B.J.	71

- Each grid square on the map at the right represents  $100 \text{ ft}^2$ . Estimate the area of the lake. (Section 2-4)



For Exercises 7 and 8, use the bar graph below. (Section 3-1)



7. Which category had the most exhibitors? How many more exhibitors were there in this category than in the photography category?
8. Tell whether this statement is *True* or *False*: "Almost one third of the exhibitors were painters."