Lesson 4.1, page 205, Example 3, Summer Sports Equipment

(The new data for ski equipment no longer fits a constant model. Therefore, we are supplying similar data for summer sports equipment sales.)

The amount (in millions of dollars) spent in the United States on fishing tackle and golf equipment is shown in the table.

a. Draw a scatter plot of each set of data in the same coordinate plane.
b. Describe the pattern of golf equipment sales.
c. Describe the pattern of fishing tackle sales. Predict the amount spent on fishing tackle in 2010.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Golf equipment</td>
<td>2606</td>
<td>2723</td>
<td>2747</td>
<td>3194</td>
<td>3560</td>
<td>3703</td>
<td>3641</td>
<td>3714</td>
</tr>
<tr>
<td>Fishing tackle</td>
<td>1906</td>
<td>1952</td>
<td>1951</td>
<td>2010</td>
<td>1970</td>
<td>1891</td>
<td>1903</td>
<td>1905</td>
</tr>
</tbody>
</table>

Solution

a. Because you want to see how spending changes over time, put time $t$ on the horizontal axis and spending $s$ on the vertical axis. Let $t$ be the number of years since 1992. The scatter plot is shown below.

b. From the scatter plot, you can see that the amount spent on golf equipment has been increasing.
c. The amount spent on fishing tackle has been fairly constant. If the spending pattern does not change, you can predict that about $1900$ million might be spent on fishing tackle in 2010.

Lesson 4.3, page 223, Exercise 69

(The new data no longer fits a linear model. Therefore, we are supplying similar data for a new topic.)

89. **Multi-Step Problem** The number of freight cars in service on American railroads from 1992 to 1998 can be modeled by the equation $y = -5.18x + 605$, where $x$ represents the number of years since 1992 and $y$ represents the number of freight cars (in thousands).
Change part (c) as follows.

c. About how many freight cars were in service in 1998?

Answers:

a. 605; the number of freight cars (in thousands) in service on American railroads in 1992

b. approximately 116.8; the number of years since 1992 when the number of freight cars on American railroads will be zero

c. 574,000 freight cars

d. Yes; the rate of decrease is small so this line graph should still be a good model for the next 50 years

Lesson 4.4, page 232, Population Rates

Actual data from 2000 census:
Northeast: about 53,600,000
Midwest: about 64,400,000
South: about 100,200,000
West: about 63,200,000

Answers do not change.

Lesson 4.6, page 247, Exercises 88 and 89, Cost of Raising a Child

In Exercises 88 and 89, the table shows estimated costs of raising a child born in 2000 to a low income family for the child’s first seven years. (Review 1.6)

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost (in dollars)</td>
<td>6280</td>
<td>6520</td>
<td>6770</td>
<td>7180</td>
<td>7450</td>
<td>7740</td>
<td>8160</td>
</tr>
</tbody>
</table>

Answers:

88. 

90. from 2003 to 2004
Projections now show the following:

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Enrollment</td>
<td>14,772,00 0</td>
<td>15,796,00 0</td>
</tr>
<tr>
<td>College Enrollment</td>
<td>14,979,00 0</td>
<td>16,296,00 0</td>
</tr>
</tbody>
</table>

*Answer:*  
52. just over 16 million