

**RETEACHING 1-7**

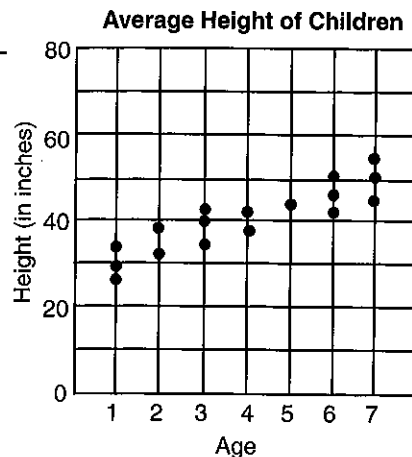
**SCATTER PLOTS AND LINES OF BEST FIT**

Two sets of related data can be shown on a **scatter plot**. The points on a scatter plot are not connected. A **line of best fit** can be drawn on some scatter plots. If the line slopes up and to the right, the two sets of data are said to have a **positive correlation**. If the line slopes down and to the right, the two sets of data are said to have a **negative correlation**.

**Example**

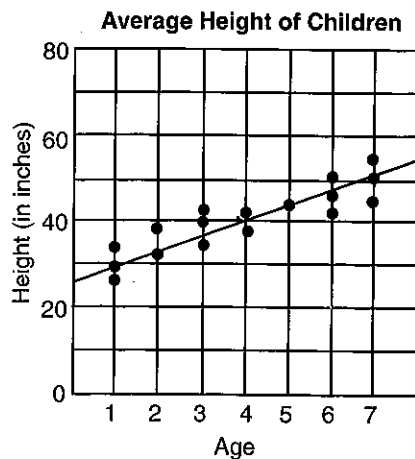
The scatter plot displays the heights of children ages 1 through 7.

- a. Estimate a line of best fit.
- b. Is there a positive or negative correlation between a child's age and his or her height?
- c. About how tall would an 8-year-old be from this data?



**Solution**

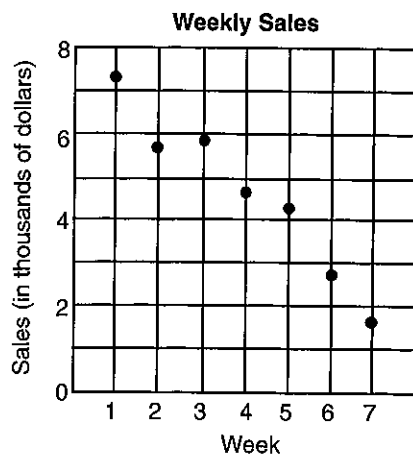
- a. Estimation can cause the line of best fit to vary. A reasonable line of best fit is shown at the right.
- b. The correlation is positive because the height increase as the age increases. The line of best fit slopes up and to the right.
- c. An 8-year-old child would be about 53 inches.



**EXERCISES**

The manager of a store that is having an end-of-the-year clearance sale recorded the number of weeks the sale has been in progress and the sales from clearance items.

1. Estimate a line of best fit.
2. Is there a positive or negative correlation between the number of weeks and the amount of sales?  
\_\_\_\_\_
3. According to this data, what should the sales in week 8 be?  
\_\_\_\_\_

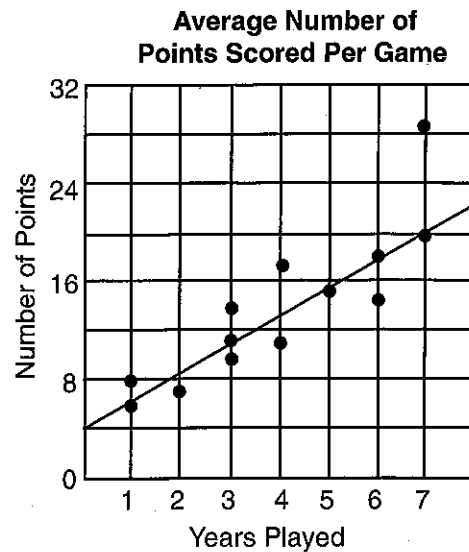


**EXTRA PRACTICE 1-7**

**SCATTER PLOTS**

**EXERCISES**

The scatter plot shows the average number of points scored by basketball team members who responded to a survey.



1. How many players responded to the survey? \_\_\_\_\_
2. How many points did the players with 7 years of experience score? \_\_\_\_\_
3. What is the range of the average number of points scored per game? \_\_\_\_\_
4. Is there a positive or negative correlation between the number of years a player has played and the average number of points scored per game? \_\_\_\_\_
5. Which data point lies farthest from the line of best fit? What could account for this piece of data? \_\_\_\_\_

Use the data table to answer Exercises 6–9.

6. Make a scatter plot and a line of best fit on your own paper. Make the horizontal axis number of customers and the vertical axis hourly sales in dollars.
7. What intervals did you choose for each axis?  
\_\_\_\_\_
8. What effect does changing the intervals have on the scatter plot?  
\_\_\_\_\_
9. Is there a positive or negative correlation between the number of customers per hour and the hourly sales?  
\_\_\_\_\_

Number of Customers per Hour	Hourly Sales (dollars)
1	6
2	9
3	6
4	15
5	28
6	22
7	18
8	33
9	25
10	48
11	44
12	52
13	60
14	61