

5-7

Study Guide and Intervention (continued)

Scatter Plots and Lines of Fit

Lines of Fit

Example

The table below shows the number of students per computer in United States public schools for certain school years from 1990 to 2000.

Year	1990	1992	1994	1996	1998	2000
Students per Computer	22	18	14	10	6.1	5.4

- a. Draw a scatter plot and determine what relationship exists, if any.

Since y decreases as x increases, the correlation is negative.

- b. Draw a line of fit for the scatter plot.

Draw a line that passes close to most of the points. A line of fit is shown.

- c. Write the slope-intercept form of an equation for the line of fit.

The line of fit shown passes through (1993, 16) and (1999, 5.7). Find the slope.

$$m = \frac{5.7 - 16}{1999 - 1993}$$

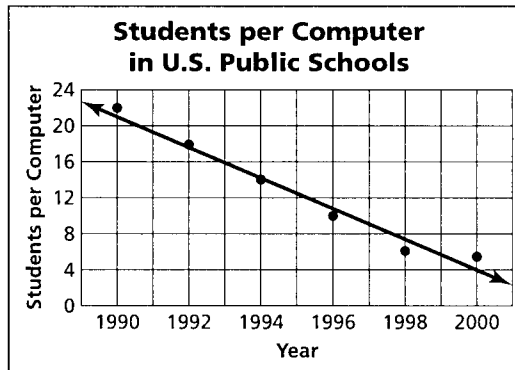
$$m = -1.7$$

Find b in $y = -1.7x + b$.

$$16 = -1.7 \cdot 1993 + b$$

$$3404 = b$$

Therefore, an equation of a line of fit is $y = -1.7x + 3404$.



Source: The World Almanac

Exercises

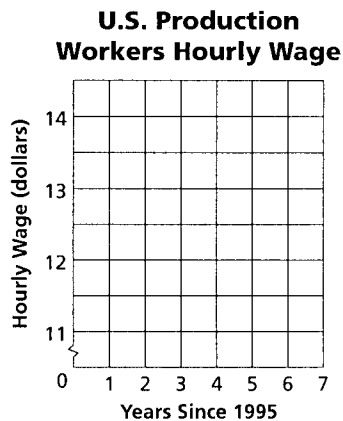
WORK ON THIS SHEET FOR #1 to 3 OK

Refer to the table for Exercises 1-3.

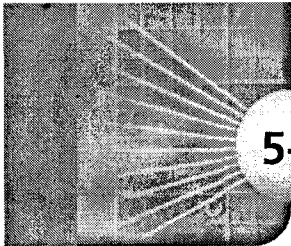
Years Since 1995	Hourly Wage
0	\$11.43
1	\$11.82
2	\$12.28
3	\$12.78
4	\$13.24

1. Draw a scatter plot.
2. Draw a line of fit for the data.

3. Write the slope-intercept form of an equation for the line of fit.



Source: The World Almanac



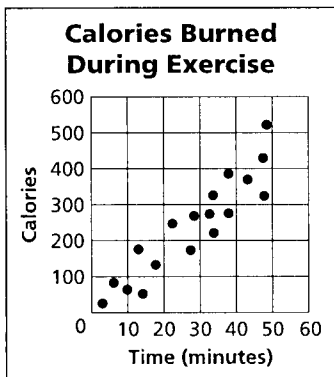
5-7

Skills Practice

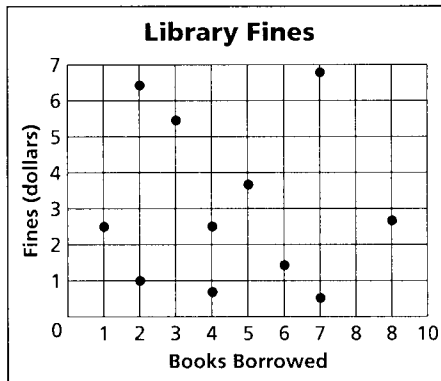
Statistics: Scatter Plots and Lines of Fit

Determine whether each graph shows a *positive correlation*, a *negative correlation*, or *no correlation*. If there is a positive or negative correlation, describe its meaning in the situation.

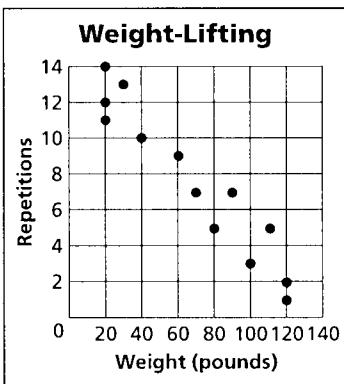
1.



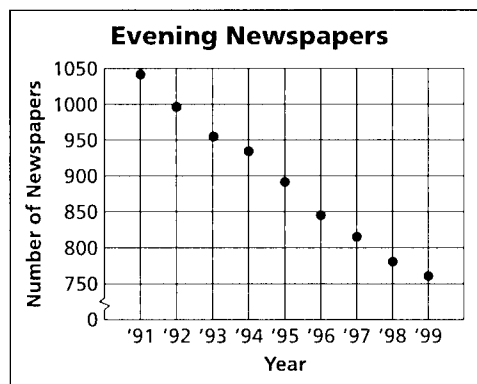
2.



3.



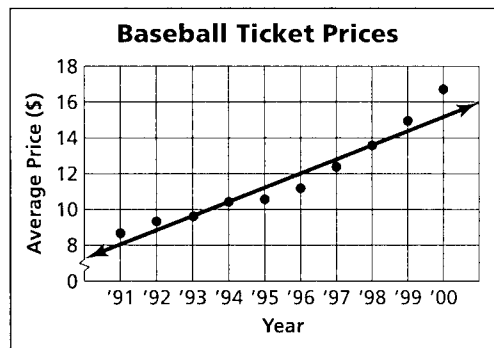
4.



Source: Editor & Publisher

BASEBALL For Exercises 5–7, use the scatter plot that shows the average price of a major-league baseball ticket from 1991 to 2000.

- Determine what relationship, if any, exists in the data. Explain.
- Use the points (1993, 9.60) and (1998, 13.60) to write the slope-intercept form of an equation for the line of fit shown in the scatter plot.
- Predict the price of a ticket in 2004.



Source: Team Marketing Report, Chicago