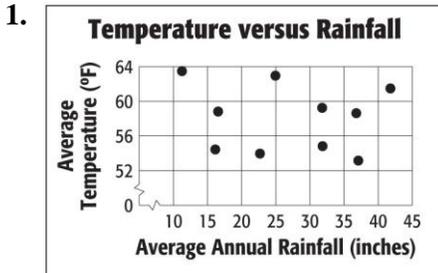


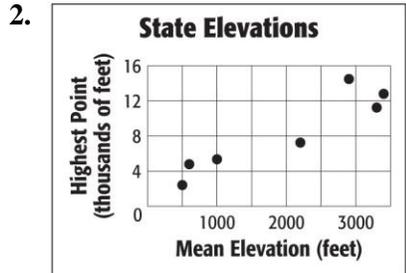
4-4 Practice

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.



Source: National Oceanic and Atmospheric Administration
no correlation



Source: U.S. Geological Survey

Positive; as the mean elevation increases, the highest point increases.

3. **DISEASE** The table shows the number of cases of Foodborne Botulism in the United States for the years 2001 to 2005.

U.S. Foodborne Botulism Cases					
Year	2001	2002	2003	2004	2005
Cases	39	28	20	16	18

Source: Centers for Disease Control

a. Draw a scatter plot and determine what relationship, if any, exists in the data.

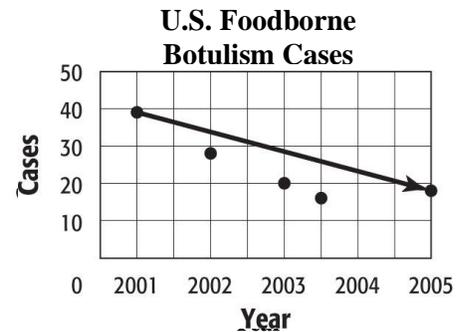
Negative correlation; as the year increases, the number of cases decreases.

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

Sample answer: Use (2001, 39) and (2005, 18).

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

Sample answer: $y = -5.25x + 10,544.25$



4. **ZOOS** The table shows the average and maximum longevity of various animals in captivity.

Longevity (years)								
Avg.	12	25	15	8	35	40	41	20
Max.	47	50	40	20	70	77	61	54

a. Draw a scatter plot and determine what relationship, if any, exists in the data.

Positive correlation; as the average increases, the maximum increases.

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

Sample answer: Use (15, 40), (35, 70).

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

Sample answer: $y = 1.5x + 17.5$

d. Predict the maximum longevity for an animal with an average longevity of 33 years. **about 67 yr**

