

Chapter 10 Review

Vocabulary Review

bivariate data (p. 331)
 clustering (p. 335)
 frequency (p. 347)
 negative association (p. 336)

no association (p. 336)
 outlier (p. 335)
 positive association (p. 336)
 relative frequency (p. 348)

scatter plot (p. 331)
 trend line (p. 340)
 two-way table (p. 347)

Choose the correct vocabulary term above to complete each sentence.

1. A ? approximates the relationship between two data sets on a scatter plot. **trend line**
2. A ? displays two sets of data as ordered pairs. **scatter plot**
3. A ? is useful for organizing and visually displaying data that pertains to two different categories. **two-way table**
4. When the points on a scatter plot show no relationship, the points have (a) ?. **no association**
5. The number of times that a data item occurs is the ? of the item. **frequency**

Lesson 10-1

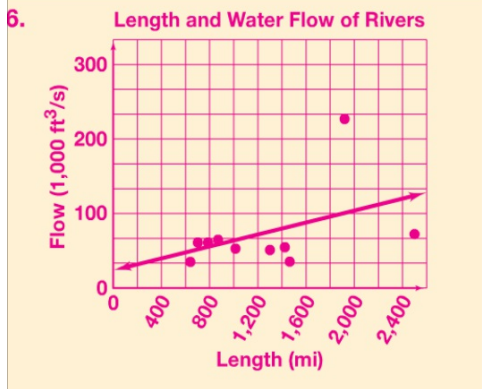
- To interpret and make scatter plots of bivariate data

A **scatter plot** is a graph that displays two sets of data, or **bivariate data**, as ordered pairs. It helps show any relationship that may exist between the data

Use the data in the table to complete Exercises 6–8.

Length (mi) and Water Flow (1,000 ft³/s) of Rivers

Length	Flow	Length	Flow
2,540	76	1,040	57
1,980	225	886	68
1,460	41	774	67
1,420	58	724	67
1,290	56	659	41



6. Make a scatter plot for the data.
See margin.
7. What does the data pair (886, 68) represent? **a river that is 886 miles long and has a water flow of 68,000 ft³/s**
8. What is the flow of the river that is 1,290 miles long? **56,000 ft³/s**

Lesson 10-2

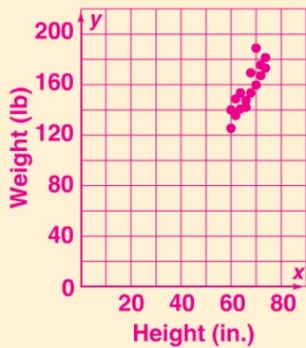
- To describe patterns in scatter plots, such as positive or negative association, and nonlinear association

A scatter plot may show an important pattern, or association, between two sets of data. If one set of values increases as the other increases, then the data have a **positive association**. If one set of values decreases as the other increases, then the data have a **negative association**. If the points show no relationship, the data have **no association**.

Height and Weight of Females

Height (in.)	58	60	62	64	65	66	68	70	72
Weight (lb)	115	120	125	133	136	115	146	153	159

Height and Weight of Females



- Make a scatter plot for the data. **See margin.**
- Identify any clustering or outliers in the data. **See left.**
- Describe the pattern of association that the scatter plot shows.

- There is clustering between the heights of 58 in. and 72 in. and between the weights of 115 lb and 159 lb. There is one outlier: (66, 115).
- As the height of a female increases, so does her weight. The scatter plot shows a positive association between the two sets of data.

Lessons 10-3

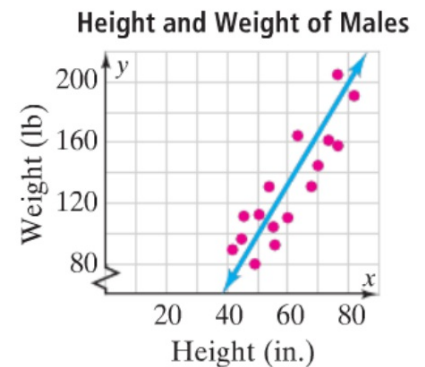
- To assess the fit of a trend line on a scatter plot
- To use trend lines to estimate and make predictions

When two sets of data have a linear association, you can use a trend line to show the association more clearly.

A **trend line** is a line on a scatter plot that approximates the relationship between the data sets.

An accurate trend line should fit the data closely. The same number of points should be above the trend line as below it.

You can use an equation of a trend line to predict a value outside the range of known values.



- Answers will vary. Sample equation: $y = 3x - 70$
- The slope of the trend line represents the ratio of the change in the weight of a male to the change in his height.

Equations are not tested

- Write an equation of the trend line. **See left.**
- What does the slope of the trend line represent?

You will need to know how the data relates to each other

Lesson 10-4

- To construct and interpret two-way frequency tables and two-way relative frequency tables

Add in a total row and a total column

You can use a **two-way table** to organize and display data that pertains to two different categories.

One hundred students at Valley Middle School were surveyed about their favorite extracurricular activity. Below are the results.

	Sports	Drama Club	Band	Student Council
Boys	30	4	16	6
Girls	14	18	8	4

14. How many boys participated in the survey? How many girls participated?
56; 44
15. What percent of the students surveyed chose Drama Club as their favorite extracurricular activity? **22%**