

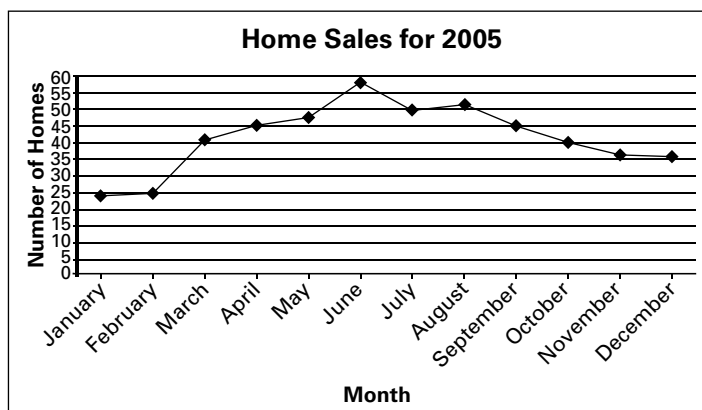
**CHAPTER
10**

Interpreting More Graphs

You have learned how to interpret data from stem-and-leaf plots, frequency tables, box-and-whisker plots, and histograms. Now you will learn to interpret data from line graphs, double line graphs, and double bar graphs.

Line graphs are used to show how data changes over a period of time.

EXAMPLE 1 The graph below shows the sales of homes throughout the year for a certain city. Answer each question, or explain why you cannot answer the question.



- Exactly how many homes were sold in May?
- Which month had the greatest number of home sales?
- Between which two consecutive months do you see the greatest increase in the number of homes sold?

Solution

- Look for the point above May: it lies between 45 and 50 homes. An exact number cannot be determined from this graph.
- Look for the highest point on the graph. June had the greatest number of home sales.
- Look for the steepest increasing line segment. The greatest increase in the number of homes sold occurred between February and March. ■

Checkpoint for Example 1

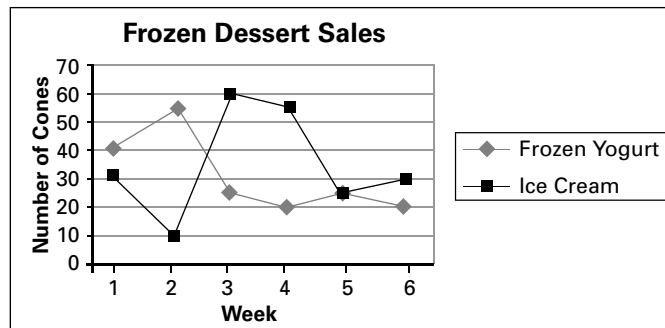
Use the graph from Example 1 to answer each exercise, or explain why you cannot answer the exercise.

- Between which two consecutive months did the number of homes sold change the most?
- Approximately how many homes were sold in July and August?
- Exactly how many homes were sold in 2005?

Interpreting More Graphs *continued*

Double line graphs show how data changes over time for two sets of data. A key will show which graph belongs to which category.

EXAMPLE 2 The graph below compares the number of ice-cream and frozen yogurt cones sold at a stand for a period of six weeks. Answer each question, or explain why you cannot answer the question.



- In week 1, which type of cone was sold the most?
- Which dessert had the greatest increase between any two consecutive weeks? Between which two weeks was this increase?
- During which week was the sale of ice cream and frozen yogurt the same? How much of each was sold?

Solution

- Look for the higher symbol above week 1. Frozen yogurt had the most sales during week 1.
- Look for the steepest increasing line segment. Ice cream had the largest increase between two consecutive weeks. This happened between weeks 2 and 3.
- Look for the point where the graphs intersect. The sale of ice cream and frozen yogurt was the same during week 5. The exact amount of the sales cannot be determined because of the scale of this graph. ■

Checkpoint for Example 2

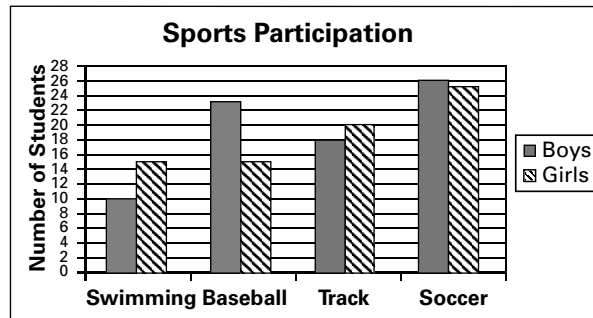
Use the graph from Example 2 to answer each exercise, or explain why you cannot answer the exercise.

- Which type of cone was sold the most over the first 3 weeks?
- Were more ice-cream cones or more frozen yogurt cones sold during week 4? Approximately how many more?
- During which week do you see the greatest difference between the types of cones sold? What is this difference?

Interpreting More Graphs *continued*

Double bar graphs are used to compare two sets of data by category.

EXAMPLE 3 The graph below shows the number of students participating in four types of sports at a middle school. Answer each question, or explain why you cannot answer the question.



- How many boys are participating in swimming and baseball?
- How many more girls than boys are participating in track?
- In which sport is there the greatest difference between the participation of boys and girls?

Solution

- Look at the bars for boys' swimming and boys' baseball. Notice that the number of boys who participate in baseball is between 22 and 24. Since the number of boys has to be a whole number we know that 23 boys participate in baseball. Add the number of boys who participate in swimming to the number of boys who participate in baseball. 33 boys participate in swimming and baseball.
- Look at the height of each bar above track. There are 18 boys and 20 girls who participate in track. Subtract the number of boys from the number of girls who participate. Two more girls participate in track than boys.
- Look at the heights of each pair of bars and look for the pair with the greatest difference. The sport with the greatest difference between the participation of boys and girls is baseball. ■

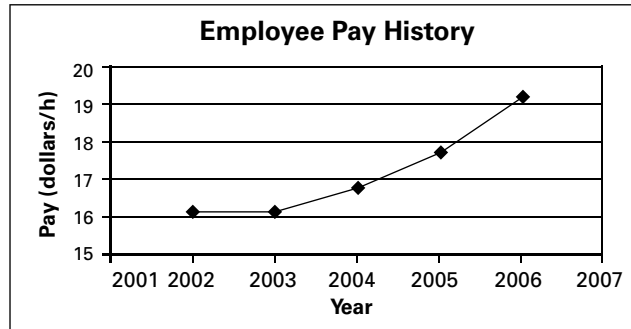
Checkpoint for Example 3

Use the graph from Example 3 to answer each exercise, or explain why you cannot answer the exercise.

- Which sport shows the smallest difference in participation between boys and girls?
- What is the total number of students participating in soccer at this school?
- Which sports have the same number of girls participating? How many girls participate in each?

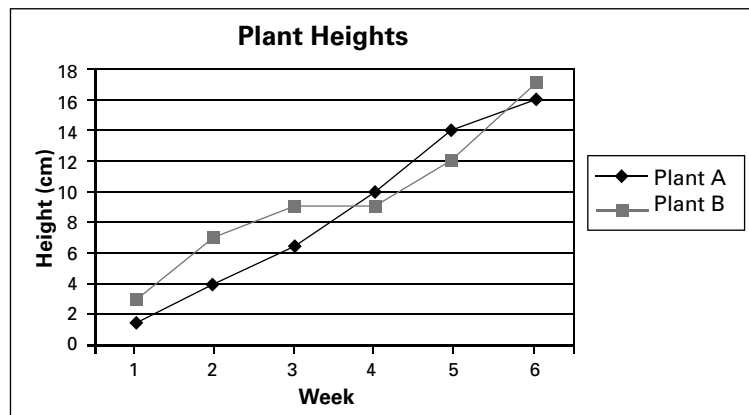
Interpreting More Graphs *continued***Practice**

Use each graph to answer Exercises 1–3. Answer each exercise, or explain why you cannot answer the exercise.



The graph above shows the pay, in dollars per hour, of an employee who worked for the same company for a period of five years.

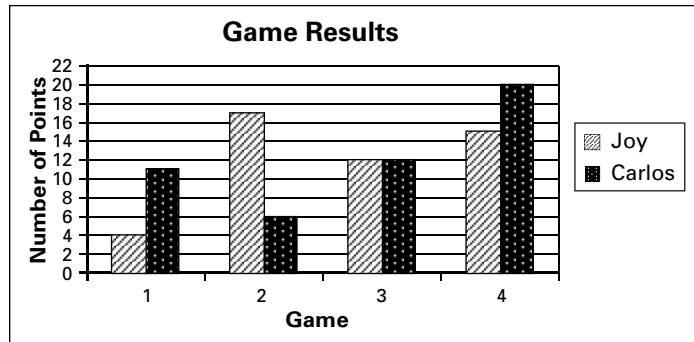
- Between which two years did the employee not receive a raise?
- Between which two years did the employee receive the biggest raise? How much was the raise?
- Approximately how much more per hour was the employee making in 2006 than in 2002?



The graph above shows the heights of two plants, to the nearest centimeter, recorded for a period of 6 weeks that were grown under different conditions. Use this graph to complete Exercises 4–6.

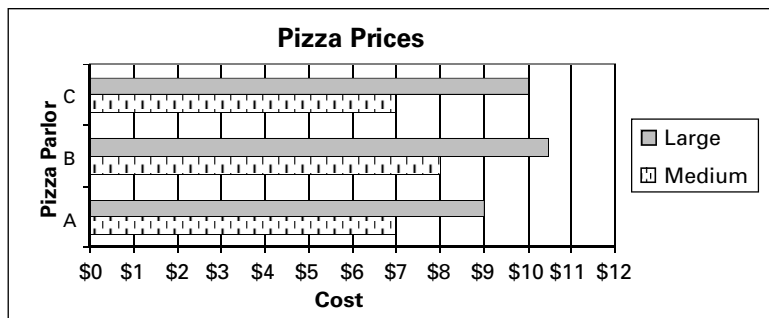
- When was plant A taller than plant B?
- Which plant had a week with no growth?
- Between which two weeks did plant B have its greatest growth? How many centimeters did it grow during that time?

Interpreting More Graphs *continued*



The graph above shows the points earned on four games by Joy and Carlos. Use this graph to complete Exercises 7–9.

7. When did Joy and Carlos have a tie?
8. On what game was the biggest difference in the number of points? How much was the difference?
9. What is Joy’s total number of points for all four games?



The graph above shows the costs of a medium and a large pizza at three different pizza parlors. Use this graph to complete Exercises 10–13.

10. Which pizza parlor charges the most for a large pizza?
11. Do any pizza parlors charge the same amount for the same size pizza? Which pizza parlors and which size?
12. At pizza parlor B, what is the approximate difference in price between a medium and a large pizza?
13. Suppose you want to order two medium pizzas and one large pizza. About how much would you save by going to pizza parlor A instead of pizza parlor B?