1-5 Reading and Interpreting Circle Graphs

Learn to read and interpret data presented in circle graphs.

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Vocabulary

circle graph

sector

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1-5 Reading and Interpreting Circle Graphs

A **circle graph**, also called a pie chart, shows how a set of data is divided into parts.

The entire circle contains 100% of the data.

Each **sector**, or slice, of the circle represents one part of the entire data set.

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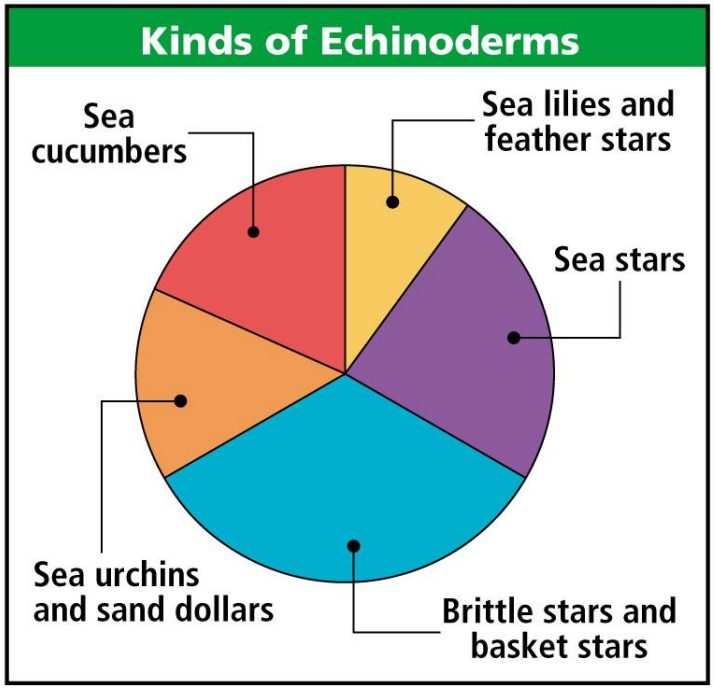
1-5 Reading and Interpreting Circle Graphs



The circle graph compares the number of species in each group of echinoderms. Echinoderms are marine animals that live on the ocean floor. The name *echinoderm* means "spiny-skinned."

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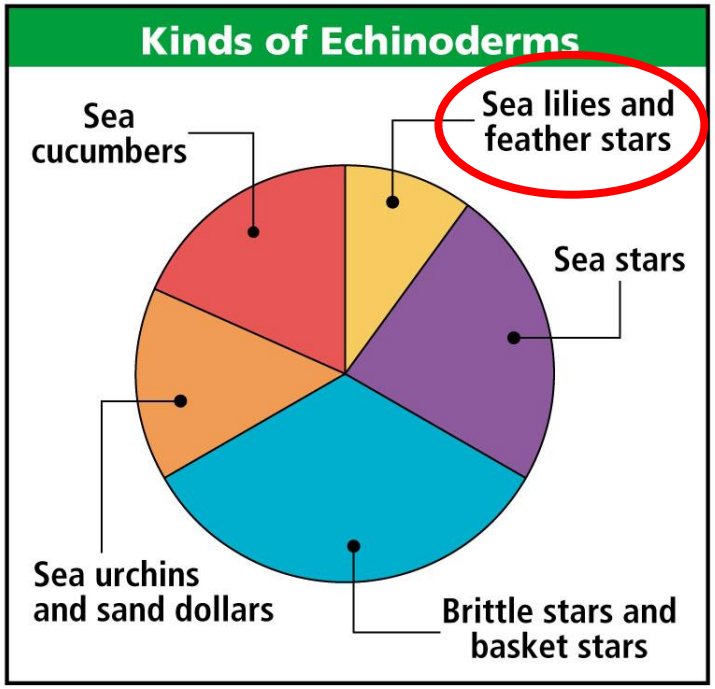
Additional Example 1A: *Life Science Application*

Use the circle graph to answer the question.

A. Which group of echinoderms includes the fewest number of species?



The sector for sea lilies and feather stars is the smallest, so this group includes the fewest number of species.

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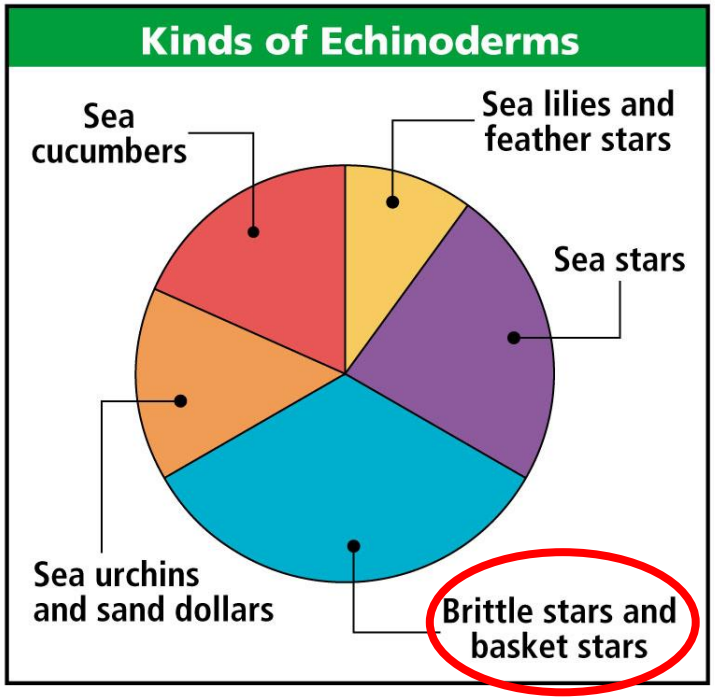
Additional Example 1B: *Life Science Application*

Use the circle graph to answer the question.

B. Approximately what percent of echinoderm species are brittle stars and basket stars?

about $\frac{1}{3}$, so approximately 33%



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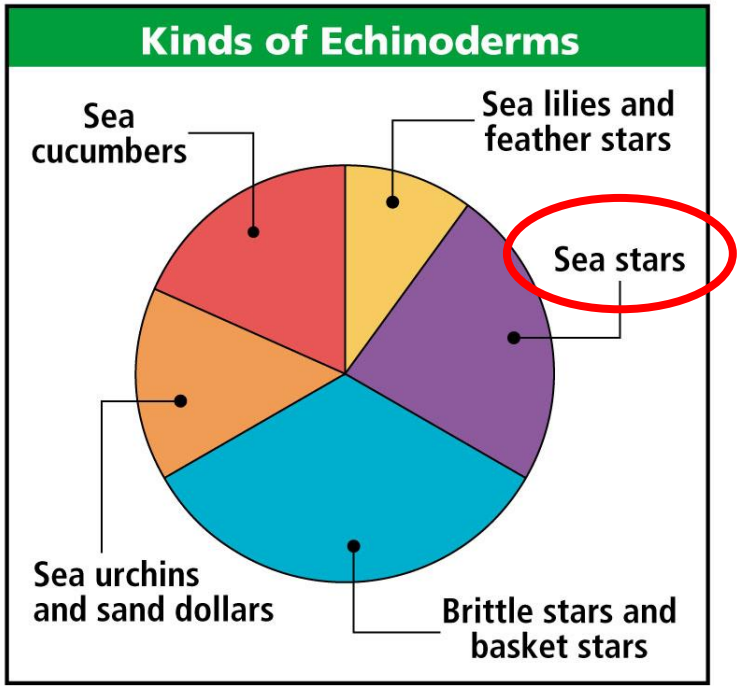
Additional Example 1C: *Life Science Application*

Use the circle graph to answer the question.

C. Which group is made up of a greater number of species, sea cucumbers or sea stars?



The sector for sea stars is larger than the sector for sea cucumbers. This means there are more kinds of sea stars than sea cucumbers.

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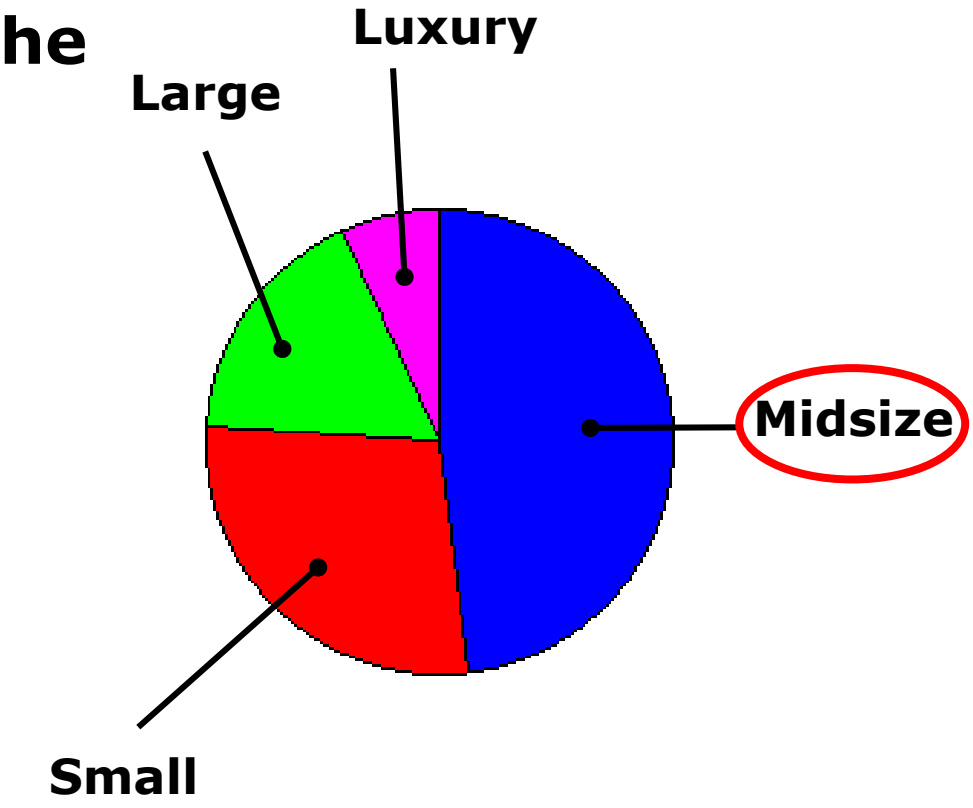
Try This: Example 1A

Use the circle graph to answer each question.

A. Which size car sold the most?

midsize



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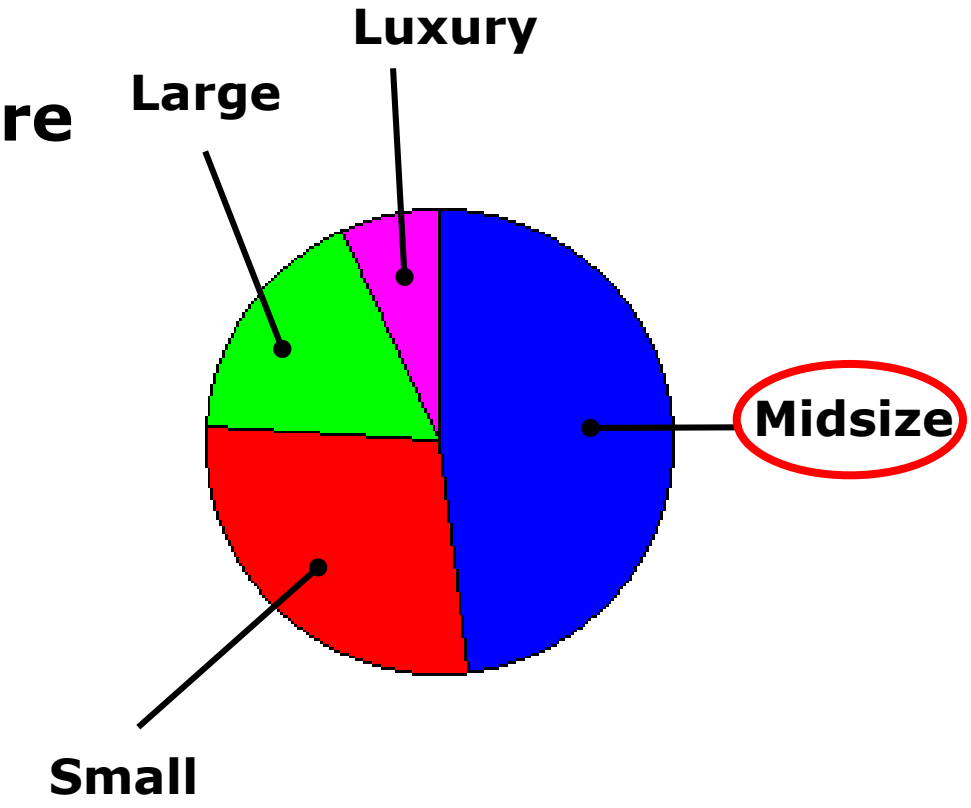
Try This: Example 1B

Use the circle graph to answer each question.

B. Approximately what percent of cars sold were midsize?

about 50%



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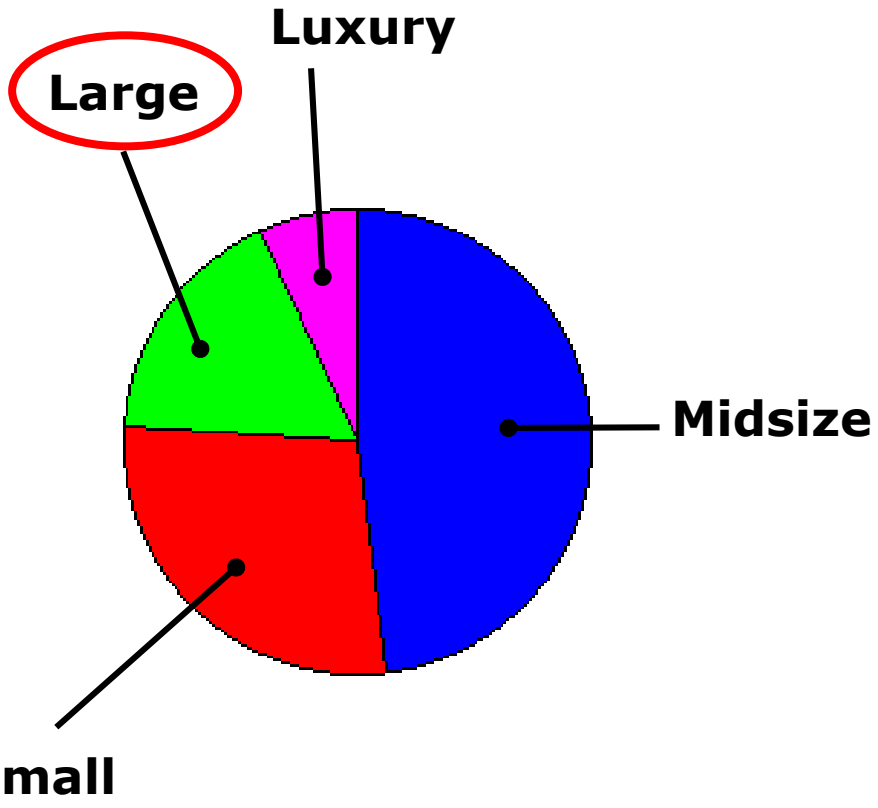
Try This: Example 1C

Use the circle graph to answer each question.

C. Which size sold less—large or small?

large



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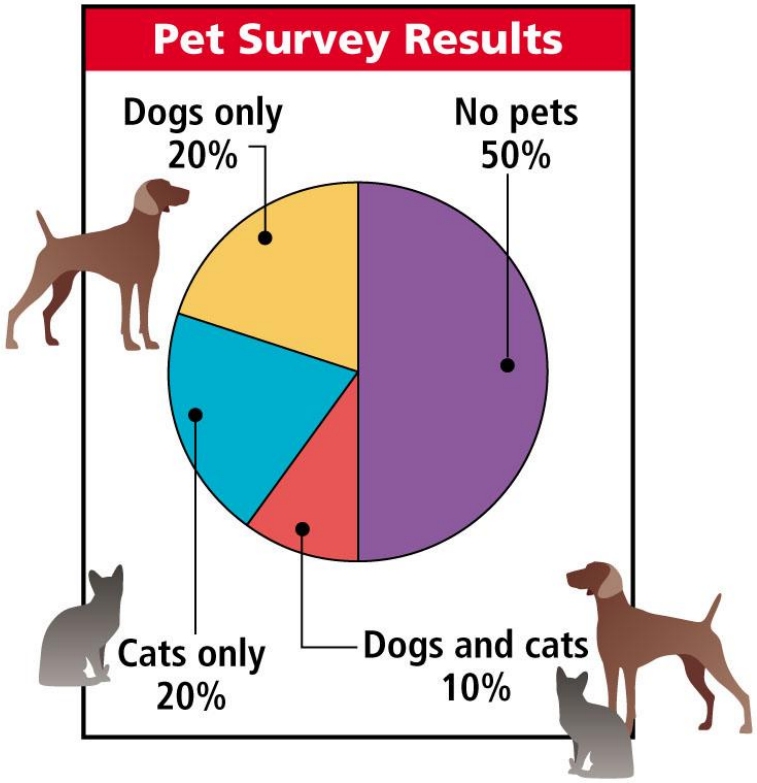
Additional Example 2A: Interpreting Circle Graphs

Leon surveyed 30 people about pet ownership. The circle graph shows his results. Use the graph to answer each question.

A. How many people own dogs only?

The circle graph shows that 20%, or one-fifth, of the people own dogs only. One-fifth of 30 is 6, so six people own dogs only.



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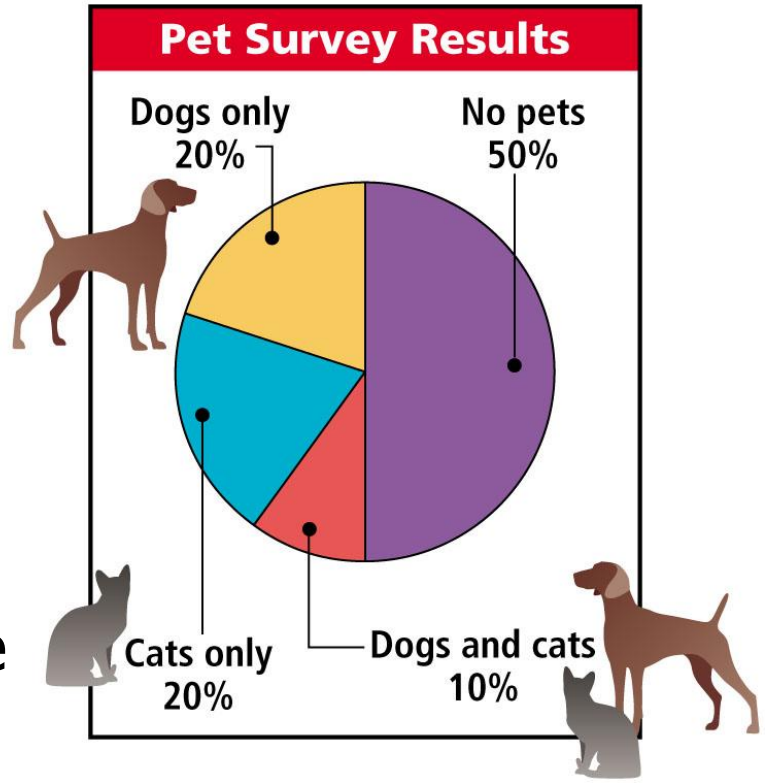
Additional Example 2B: Interpreting Circle Graphs

Leon surveyed 30 people about whether they own pets. The circle graph shows his results. Use the graph to answer each question.

B. If 60 people were surveyed and 12 people said they own dogs only, how many people own both cats and dogs?



Since 20% is 12 people, 10% is 6 people. Six people own both cats and dogs.

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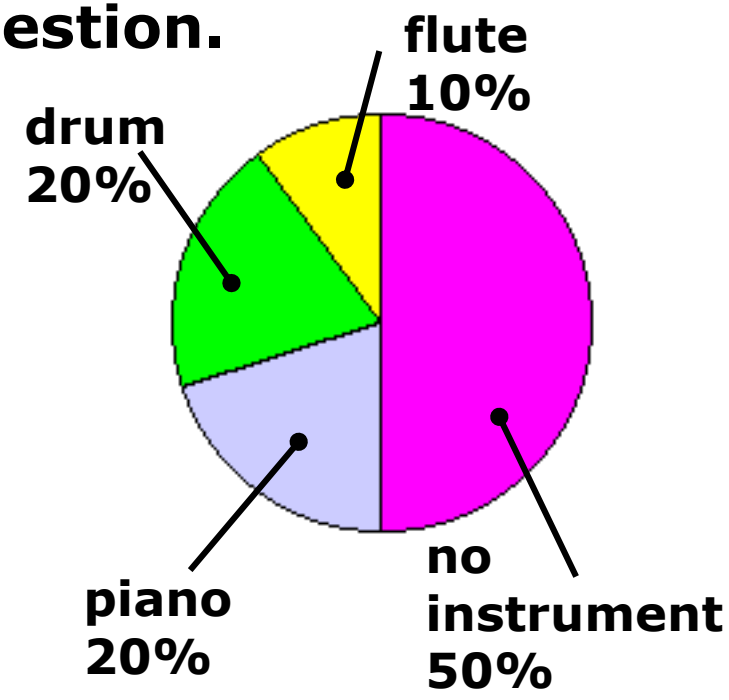
Try This: Example 2A

Fifty students were asked which instrument they could play. The circle graph shows the responses. Use the graph to answer each question.



A. How many students do not play an instrument?

The circle graph shows that 50%, or one-half, of the students play no instrument. One-half of 50 is 25, so twenty-five students do not play an instrument.

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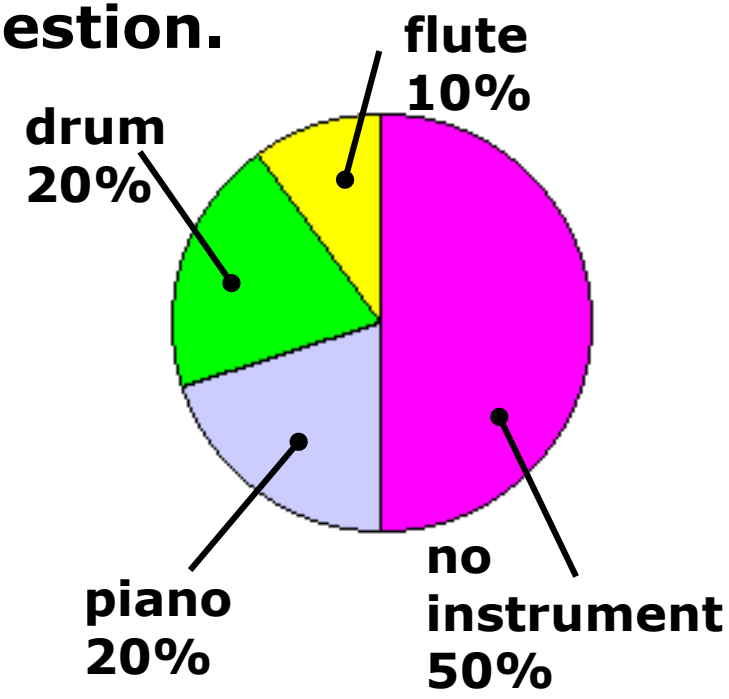
Try This: Example 2B

Fifty students were asked which instrument they could play. The circle graph shows the responses. Use the graph to answer each question.



B. Ten students said they play the piano. How many play the flute?

Since 20% is 10 students, 10% is 5 students. Five students play the flute.

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Additional Example 3A: Choosing an Appropriate Graph

Decide whether a bar graph or circle graph would best display the information. Explain your answers.

A. the percent of U.S. population living in the different regions of the country

A circle graph is the better choice because it makes it easy to see what part of the U.S. population comes from the different regions of the country.

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Additional Example 3B: Choosing an Appropriate Graph

Decide whether a bar graph or circle graph would best display the information. Explain your answers.

B. the number of tickets sold for each performance of a community play

A bar graph is the better choice because it makes it easy to see how the number of tickets sold changed over each performance.

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Additional Example 3C: Choosing an Appropriate Graph

Decide whether a bar graph or circle graph would best display the information. Explain your answers.

C. the comparison between the number of students on the basketball team and the total number of students on all sports teams

A circle graph is the better choice because the sector that represents the number of students on the basketball team could be compared to the entire circle, which represents the total number of students on all school sports teams.

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Try This: Example 3A

Decide whether a bar graph or circle graph would best display the information. Explain your answers.

A. the percent of people buying a certain color of a new vehicle

A circle graph is the better choice. By looking at the sectors, it makes it easy to see what color people prefer.

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Try This: Example 3B

Decide whether a bar graph or circle graph would best display the information. Explain your answers.

B. the number of visitors to the Grand Canyon for the last ten years

A bar graph is the better choice because it makes it easy to see how the number of visitors has changed over the years.

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Try This: Example 3C

Decide whether a bar graph or circle graph would best display the information. Explain your answers.

C. the comparison of different themes voted on for a school party

A circle graph is a better choice because it makes it easy to see what theme people prefer.

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1-7 Line Graphs

Learn to display and analyze data in line graphs.

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Vocabulary

line graph

double-line graph

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1-7 Line Graphs

You can use a *line graph* to show how data changes over a period of time.

A **line graph** uses line segments to connect data points. The result is a visual record of change.

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Additional Example 1: Making a Line Graph

Make a line graph of the data in the table. Use the graph to determine during which 2-hour period did the temperature change the most?

Time	11 A.M.	1 P.M.	3 P.M.	5 P.M.
Temperature	80°F	88°F	92°F	89°F

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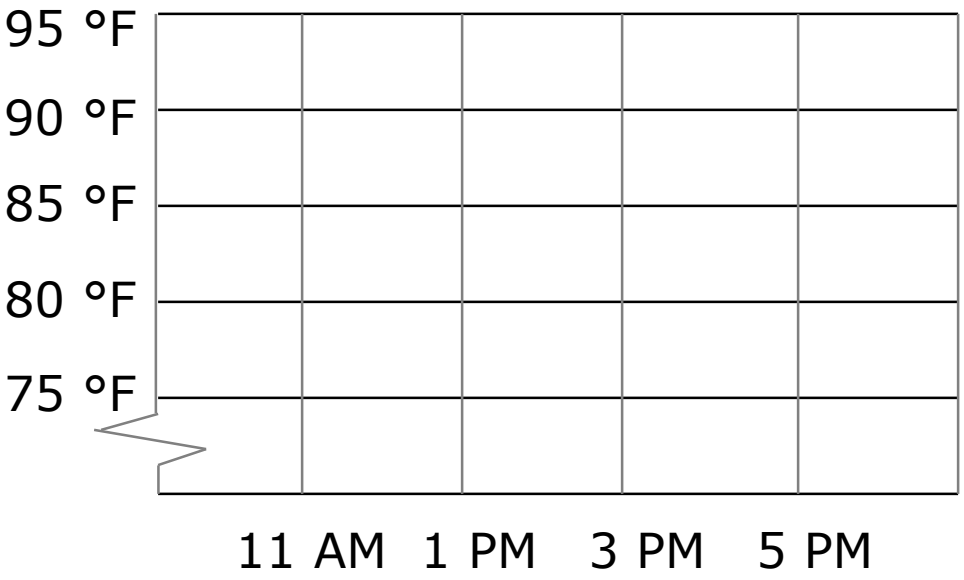
Additional Example 1 Continued

Time	11 A.M.	1 P.M.	3 P.M.	5 P.M.
Temperature	80°F	88°F	92°F	89°F

Step 1: Determine the scale and interval for each axis. Place units of time on the horizontal axis.



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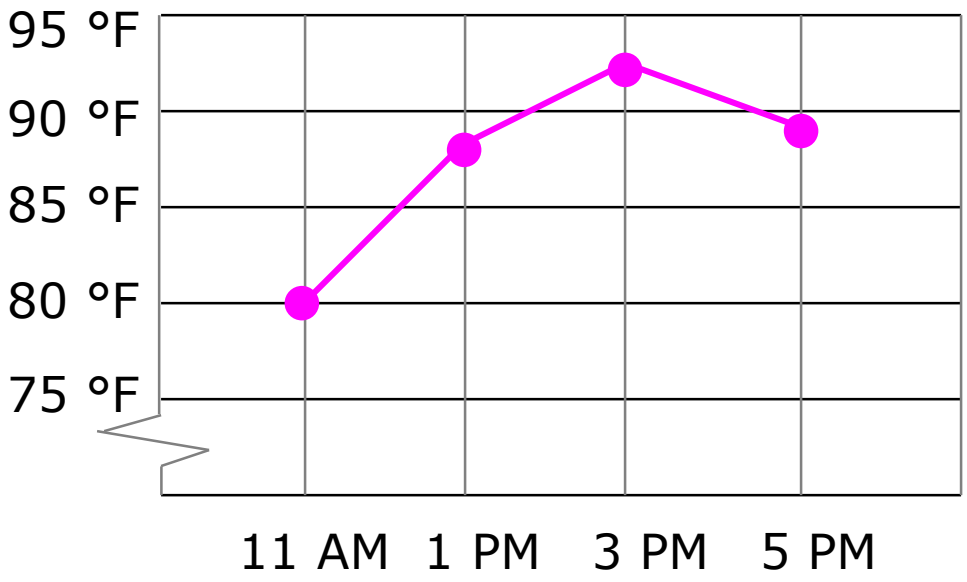
Additional Example 1 Continued

Time	11 A.M.	1 P.M.	3 P.M.	5 P.M.
Temperature	80°F	88°F	92°F	89°F

Step 2: Plot a point for each pair of values.
Connect the points using line segments.



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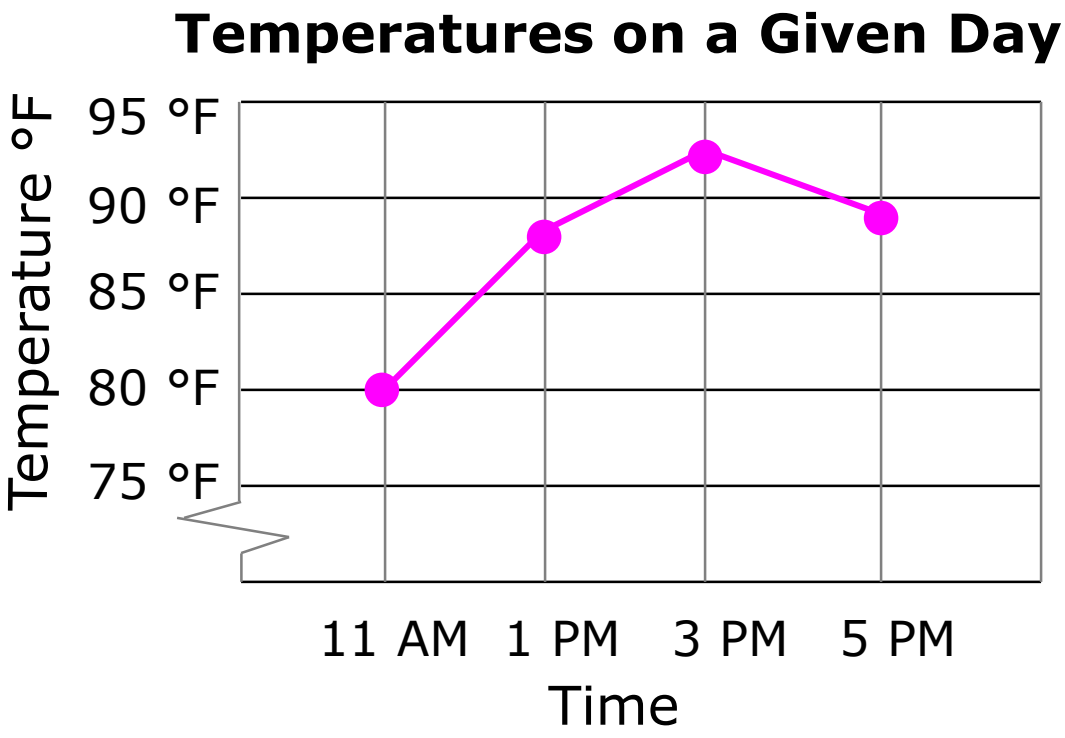
Additional Example 1 Continued

Time	11 A.M.	1 P.M.	3 P.M.	5 P.M.
Temperature	80°F	88°F	92°F	89°F

Step 3: Label the axes and give the graph a title.



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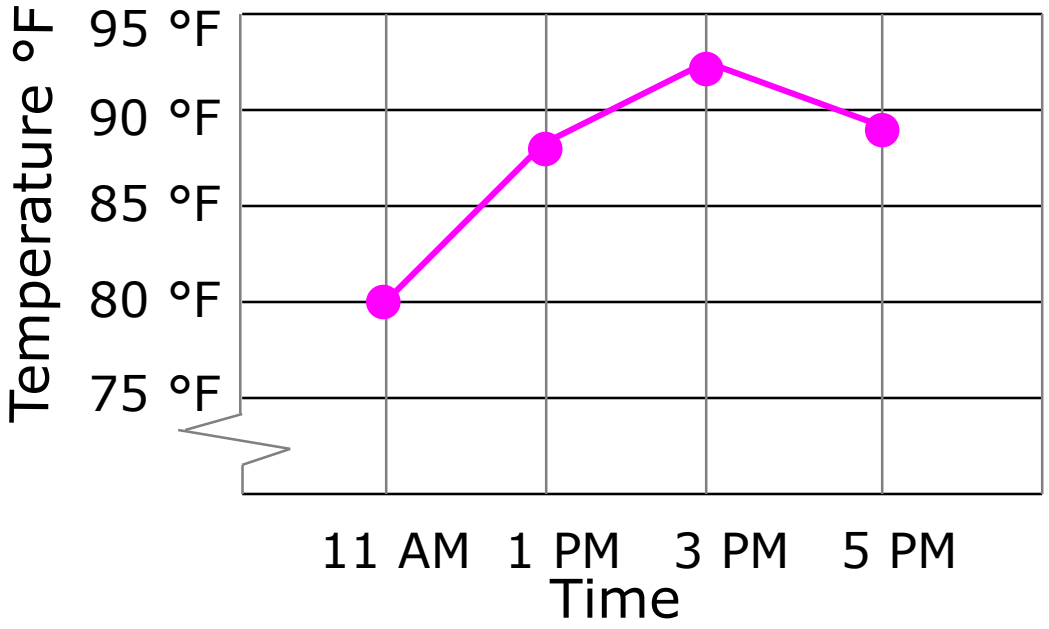
Additional Example 1 Continued

The temperature changed the most between 11 A.M. and 1 P.M.

Temperatures on a Given Day



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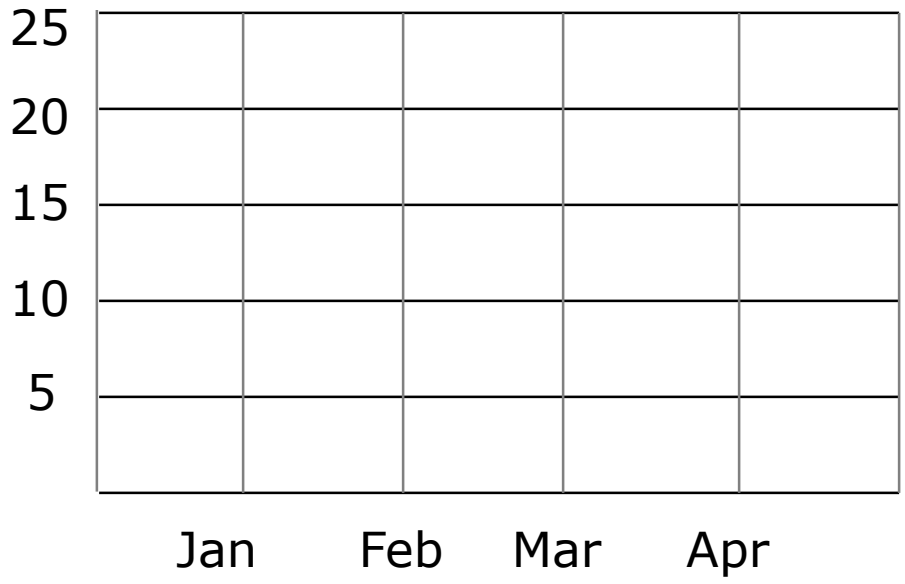
Try This: Example 1

Month	Jan	Feb	Mar	Apr
Homes Sold	8	6	15	23

Step 1: Determine the scale and interval for each axis.



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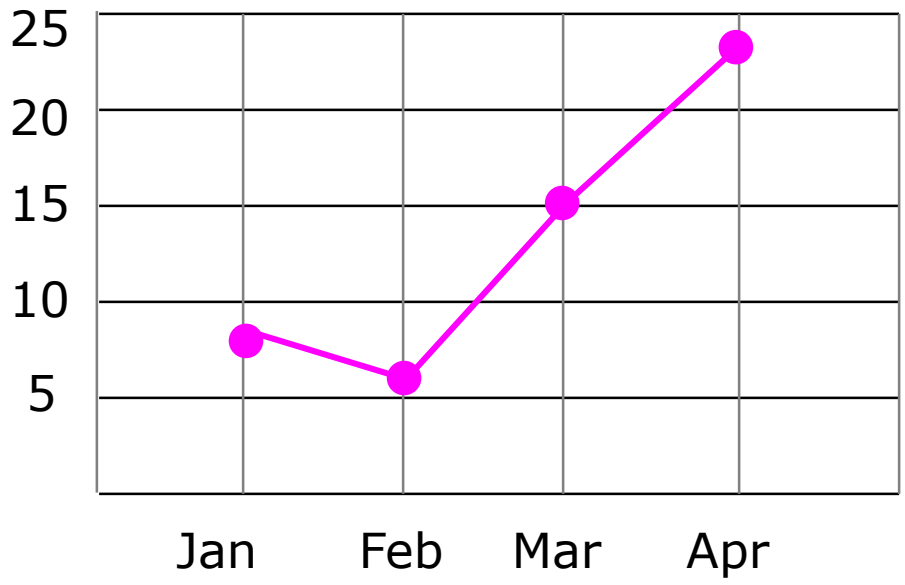
Try This: Continued

Month	Jan	Feb	Mar	Apr
Homes Sold	8	6	15	23

Step 2: Plot a point for each pair of values.
Connect the points using line segments.



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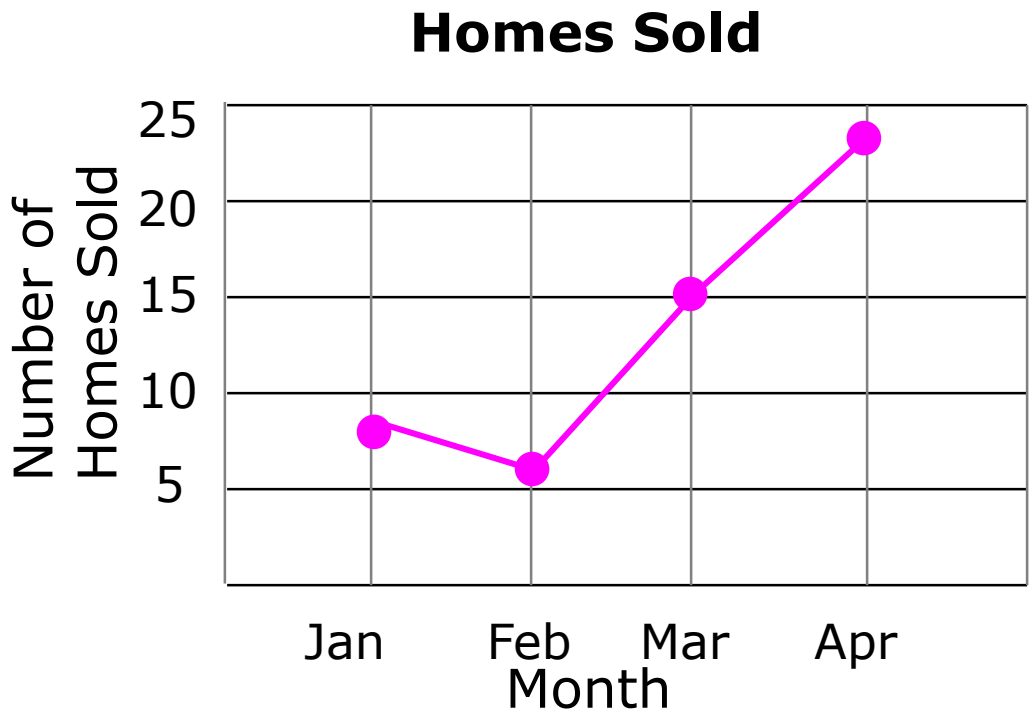
Try This: Continued

Month	Jan	Feb	Mar	Apr
Homes Sold	8	6	15	23

Step 3: Label the axes and give the graph a title.



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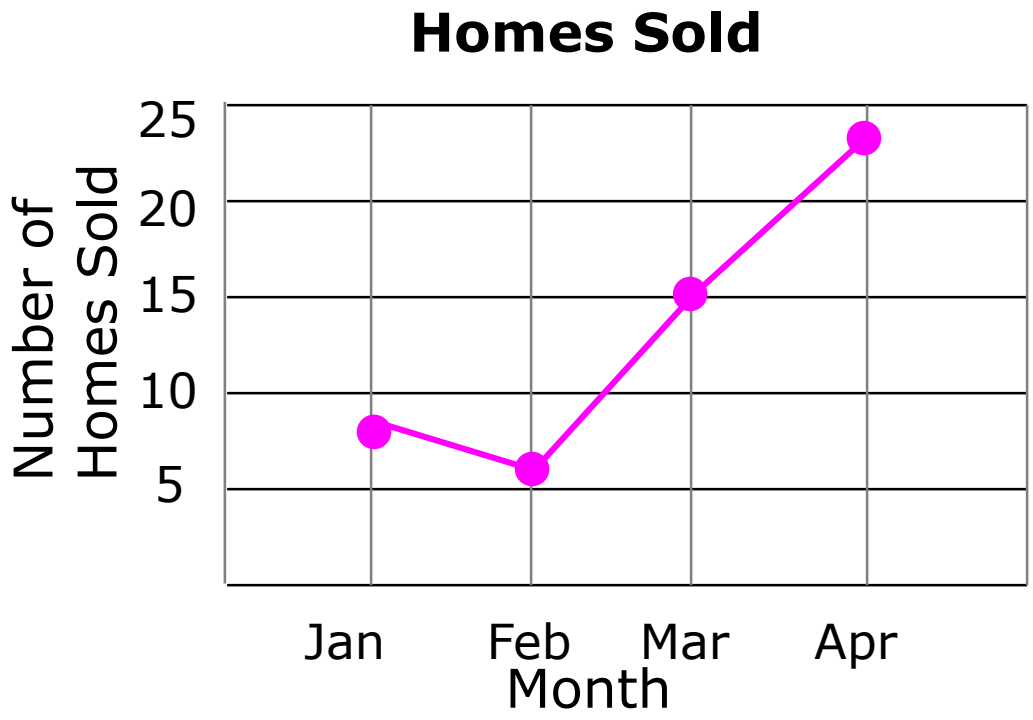
Try This: Continued

March showed the greatest increase in number of homes sold.



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1-7 Line Graphs

You can use a line graph to estimate values between data points.

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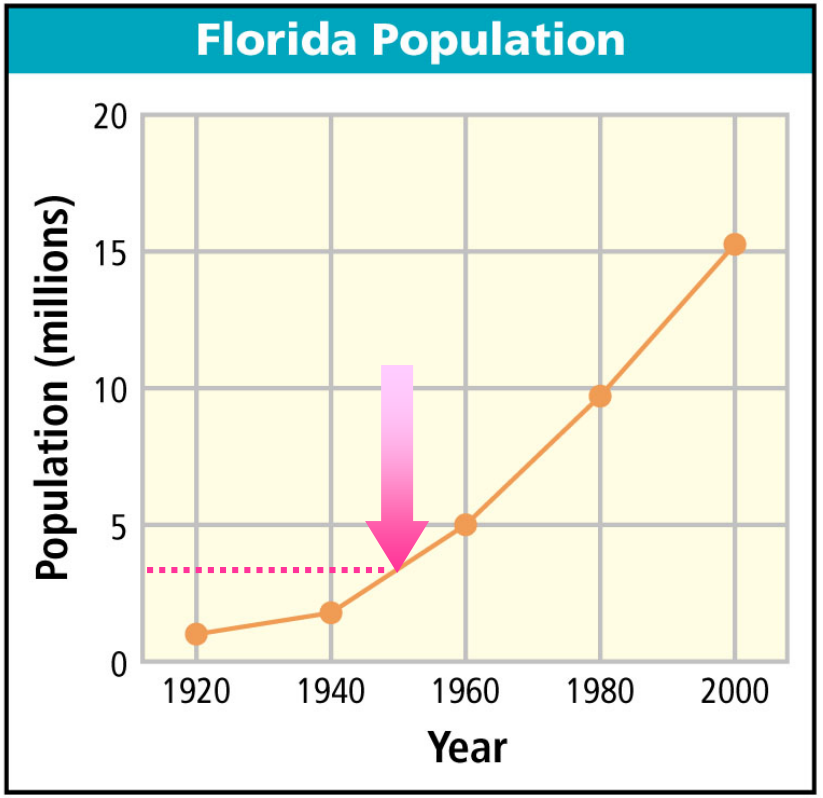
Additional Example 2: Using a Line Graph to Estimate Data

Use the graph to estimate the population of Florida in 1950.

To estimate the population in 1950, find the point on the line between 1940 and 1960 that corresponds to 1950.

The graph shows about 3.5 million people.



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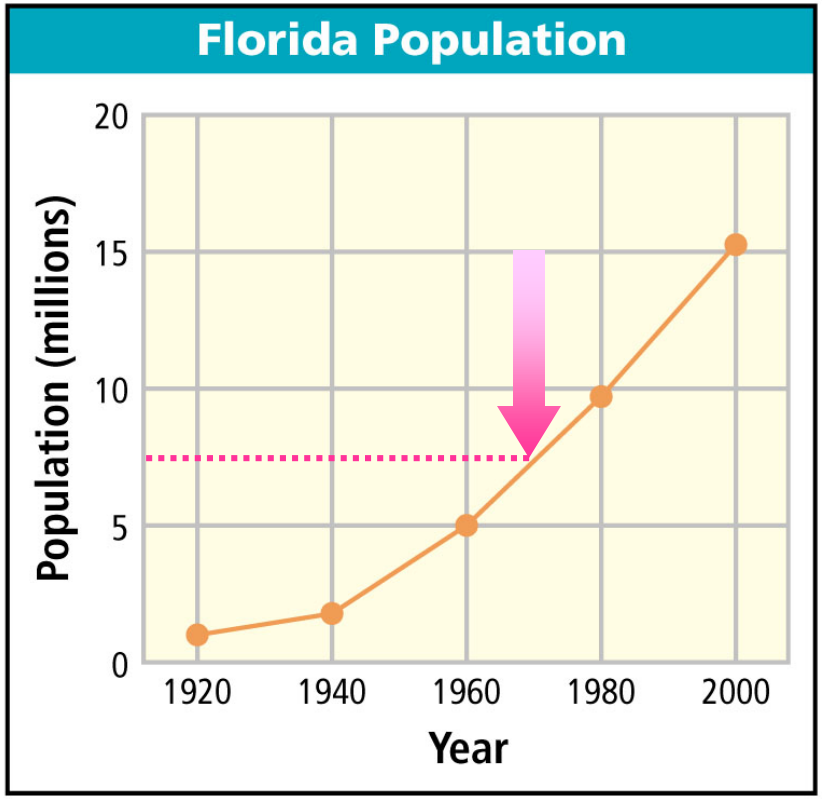
Try This: Example 2

Use the graph to estimate the population of Florida in 1970.

To estimate the population in 1970, find the point on the line between 1960 and 1980 that corresponds to 1970.

The graph shows about 7.5 million people.



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1-7 Line Graphs

A **double-line graph** shows change over time for two sets of data.

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Additional Example 3: Making a Double-Line Graph

The table shows stock prices for two stocks in one week. Make a double-line graph of the data.

	Mon	Tue	Wed	Thu	Fri
Stock A	$10	$9	$11	$10	$8
Stock B	$6	$12	$8	$14	$14

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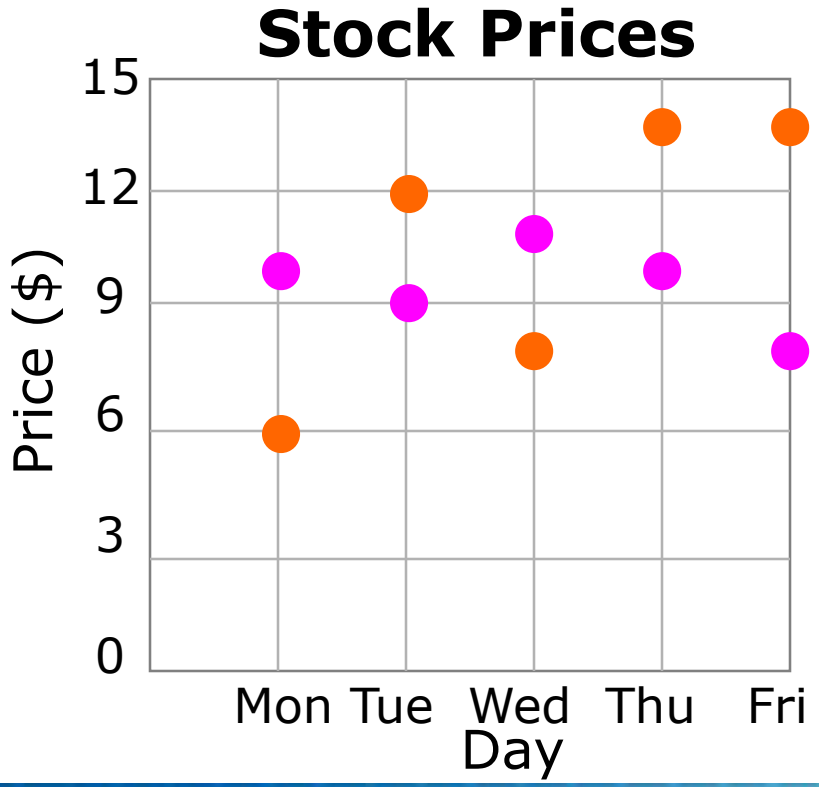
Additional Example 3: Making a Double-Line Graph

	Mon	Tue	Wed	Thu	Fri
Stock A	$10	$9	$11	$10	$8
Stock B	$6	$12	$8	$14	$14

Plot a point for Stock A for each day of the week.

Then, using a different color, plot a point for Stock B for each day of the week.



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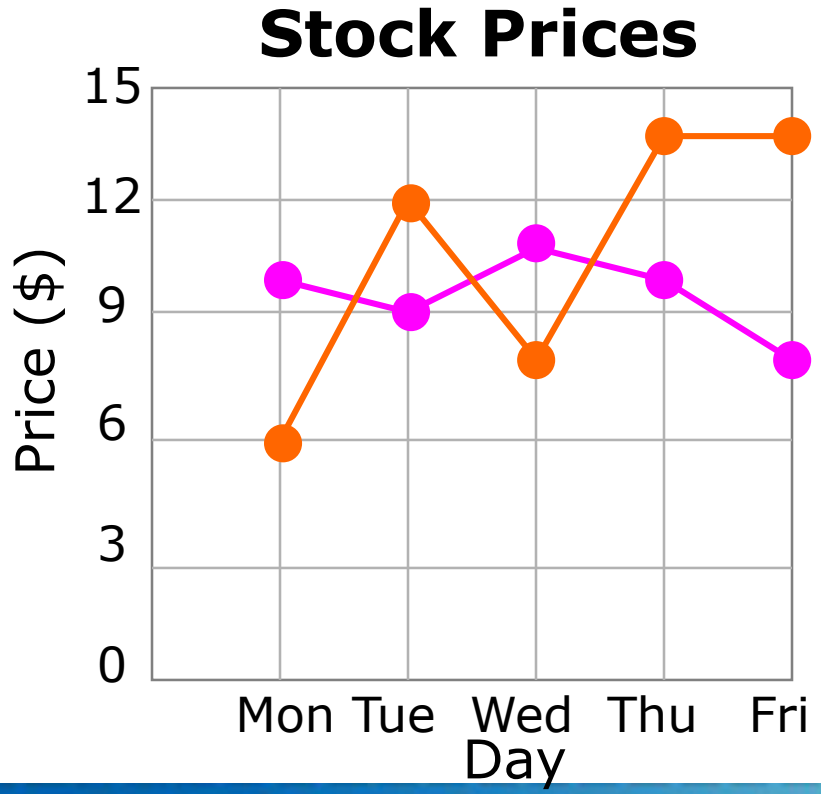
Additional Example 3 Continued

	Mon	Tue	Wed	Thu	Fri
Stock A	$10	$9	$11	$10	$8
Stock B	$6	$12	$8	$14	$14

Connect the points.



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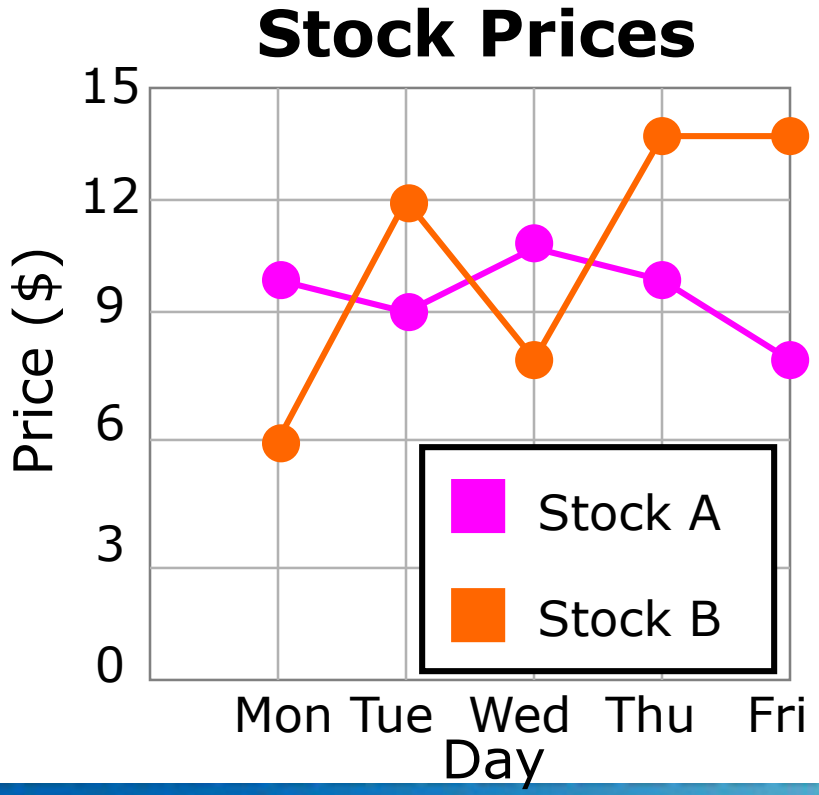
Additional Example 3 Continued

	Mon	Tue	Wed	Thu	Fri
Stock A	$10	$9	$11	$10	$8
Stock B	$6	$12	$8	$14	$14

Make a key to show what each line represents.



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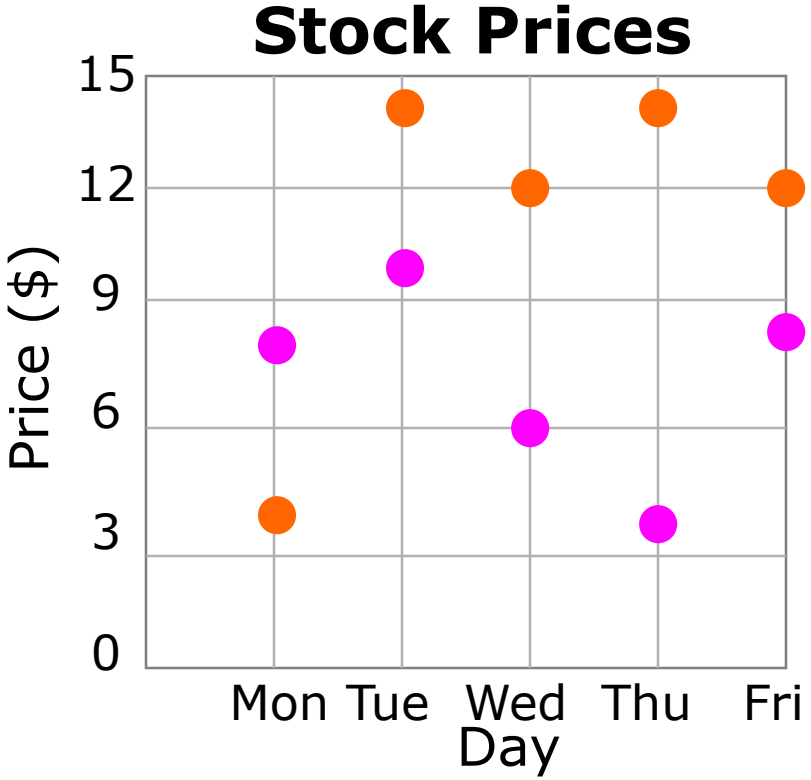
Try This: Example 3

	Mon	Tue	Wed	Thu	Fri
Stock A	$8	$10	$6	$4	$8
Stock B	$4	$14	$12	$14	$12

Plot a point for Stock A for each day of the week.

Then, using a different color, plot a point for Stock B for each day of the week.



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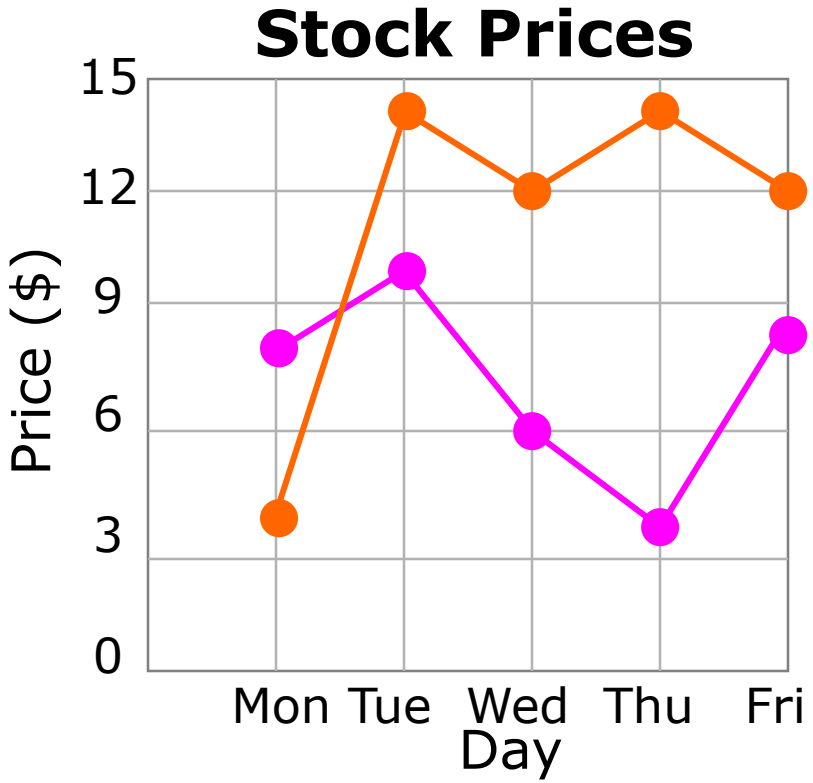
Try This: Example 3

	Mon	Tue	Wed	Thu	Fri
Stock A	$8	$10	$6	$4	$8
Stock B	$4	$14	$12	$14	$12

Connect the points.



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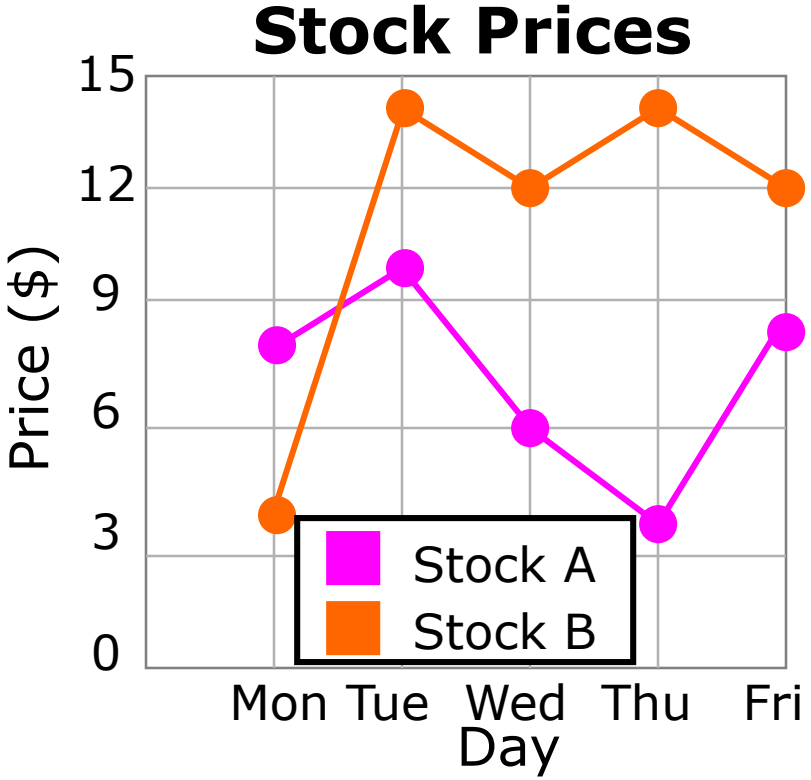
Try This: Example 3

	Mon	Tue	Wed	Thu	Fri
Stock A	$8	$10	$6	$4	$8
Stock B	$4	$14	$12	$14	$12

Make a key to show what each line represents.



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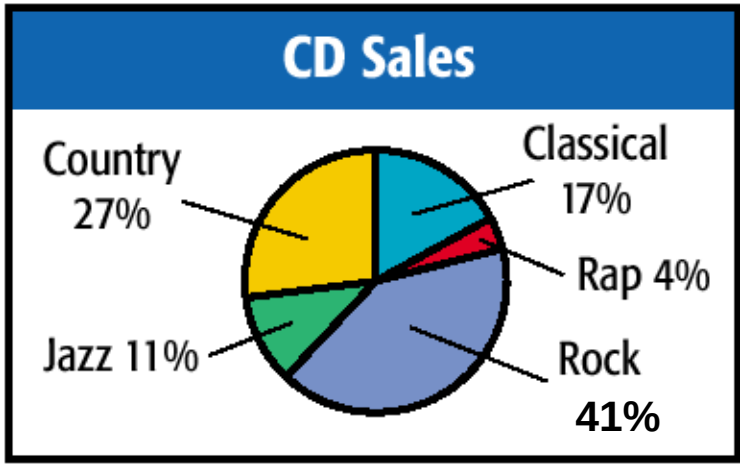
Lesson Quiz

Use the circle graph to answer question 1-3.



1. Which group of CDs sold the most? rock

2. What percent of the CD sales are country? 27%

3. Which type of CD sells the least? rap

4. Would a bar or circle graph best display the sales of a department store for the last 5 months? bar graph

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Lesson Quiz

Make a double line graph of the data.

Hot Air Balloon Heights		
Time (A.M.)	**Balloon 1**	**Balloon 2**
6:00	0	0
6:15	150	175
6:30	250	275
6:45	350	375
7:00	350	400
7:15	250	275

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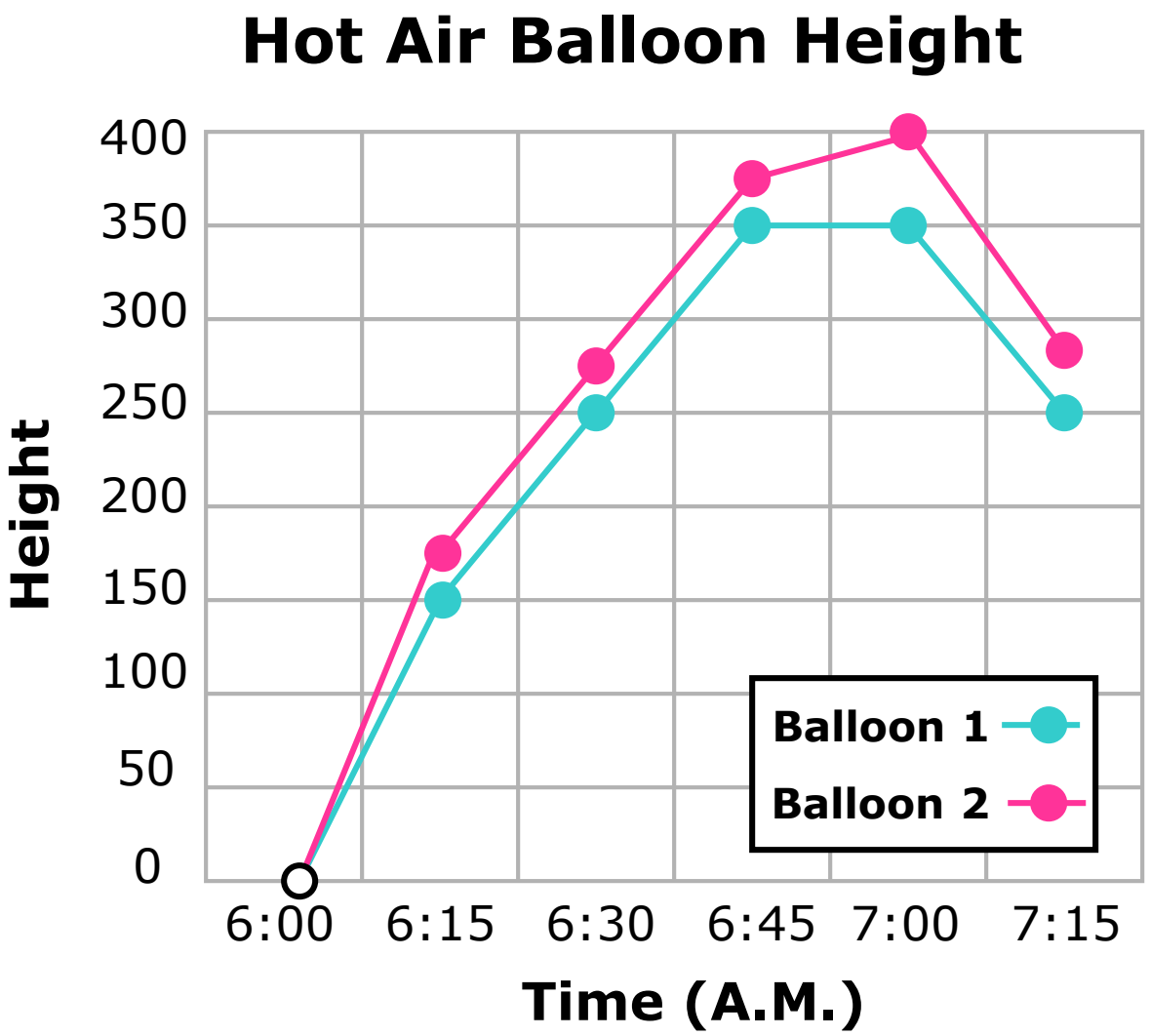
Lesson Quiz



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Homework

1-5 and 1-7 Worksheet

Study for 1-1 to 1-9 test Thursday