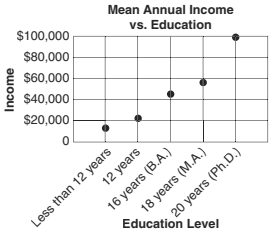
LESSON 7-9

Problem Solving

Scatter Plots

Write the correct answer.

This scatter plot compares the mean annual income of Americans with the number of years spent in school.



1. Which level of education has a mean annual income between $40,000 and $50,000?

   16 years, B.A.

2. Estimate the range of income data on this scatter plot.

   about $85,000

3. Which level of education has the lowest income?

   less than 12 years

4. Does the scatter plot show a positive correlation, negative correlation, or no correlation between education and income?

   positive correlation

Choose the letter for the best answer.

5. What kind of correlation would you expect to find between a city's annual snowfall amount and the size of its population?
   - **A** positive correlation
   - **B** negative correlation
   - **C** no correlation
   - **D** impossible to say

6. What kind of correlation would you expect to find between a movie's length and the number of times it can be shown in a day?
   - **F** positive correlation
   - **G** negative correlation
   - **H** no correlation
   - **J** impossible to say

7. What kind of correlation would you expect to find between an animal's mass and the number of calories it consumes in a day?
   - **A** positive correlation
   - **B** negative correlation
   - **C** no correlation
   - **D** impossible to say

8. What kind of correlation would you expect to find between a person's height and his or her income?
   - **F** positive correlation
   - **G** negative correlations
   - **H** no correlation
   - **J** impossible to say

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LESSON 7-9

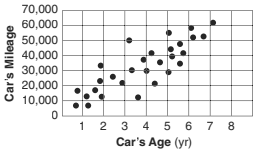
Reading Strategies

Drawing Conclusions

You can place individual data points on a graph to see if a pattern occurs. This type of graph is called a **scatter plot.**

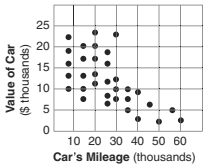
Scatter Plot A identifies a car's age and its mileage. Age in years is listed along the bottom of the graph. Mileage is listed along the left side of the graph in intervals of 10,000 miles.

Notice how the points for each data pair create a graph with an upward pattern. This indicates a positive relationship between the number of miles a car has been driven and the age of the car.



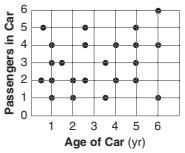
Scatter Plot B identifies a car's value and its mileage. Miles are given in intervals of 10,000. Values are in intervals of $5,000.

Notice how the points for each data pair create a downward pattern. This shows that the greater the mileage, the less a car is worth.



Scatter Plot C identifies a car's age and the number of passengers in the car.

Notice how the points are scattered on the graph. This shows that there is no relationship between these two sets of data.



Read each statement. Identify the scatter plot that helps you determine the answer, and write "true" or "false."

1. The older the car, the fewer the miles. Plot A; false
2. The more miles on a car, the less its value. Plot B; true
3. The newer the car, the fewer the miles. Plot A; true
4. The older the car, the more passengers it can carry. Plot C; false

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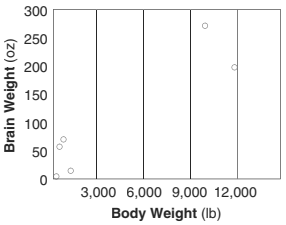
LESSON 7-9

Puzzles, Twisters & Teasers

Scatter Brained!

Does the size of the brain determine the size of the body? Chart the data from the table below as a scatter plot. Then answer the questions.

Animal	Brain Weight (oz)	Body Weight (lb)
Human	53	140
Bottlenose Dolphin	56	340
Asian Elephant	263	10,000
Killer Whale	197	12,000
Cow	17	1,000
Mouse	0.014	0.024



1. What kind of correlation do you see in the scatter plot?
   - **A** positive correlation
   - **B** negative correlation
   - **C** no correlation

2. A mouse's brain makes up 3.2% of its body weight. A human's brain makes up 2.1% of its body weight. A cow's brain makes up 0.1% of its body weight. Which animal has the biggest brain in relation to its size?
   - **A** mouse
   - **B** human
   - **C** cow

3. Which animal is the smartest, a cow, a human, or a bottlenose dolphin?
   - **A** cow
   - **B** human
   - **C** bottlenose dolphin

4. Based on your conclusions, does a bigger brain make a bigger body?
   - **A** can't tell
   - **B** no
   - **C** sure

Use the underlined letters to solve this brain teaser.

How do you count a herd of cows?

With a C O W C U L A T O R.

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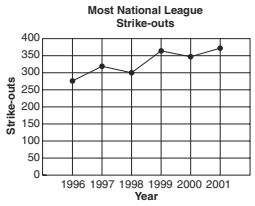
LESSON 7-10

Practice A

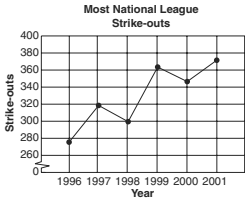
Misleading Graphs

1. Which graph could be misleading? Why?

Graph A



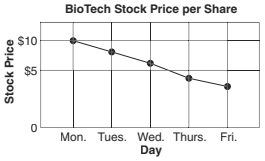
Graph B



Graph B; Possible answer: The vertical axis is broken; it looks as if the number of strikeouts in 2001 is 10 times as great as in 1996.

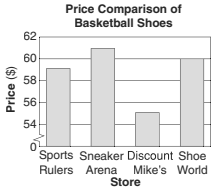
Tell why each graph could be misleading.

2.



The intervals on the vertical axis are unequal.

3.



The broken axis makes Discount Mike's look much less expensive.

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