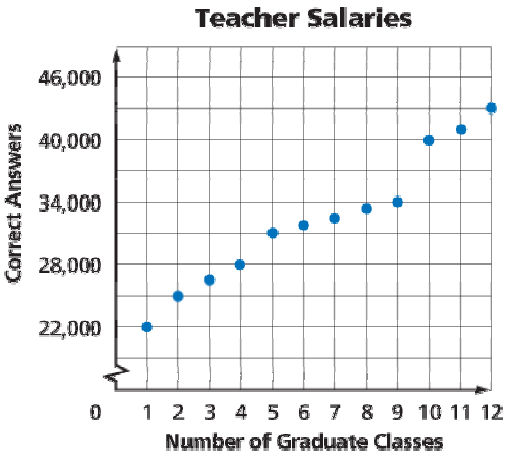
Lesson 9-6

Example 1

MANUFACTURING The scatter plot shows the relationship between graduate classes and salaries at one school district.



a. Why are the scales different?

b. What does each • represent?

c. Find the average salary for an employee with 5 graduate classes.

d. Describe the relationship between graduate classes and salary?

Solution

a. There are two different sets of data-number of graduate classes and salary.

b. Each • represents the average salary given the number of graduate classes.

c. $31,000

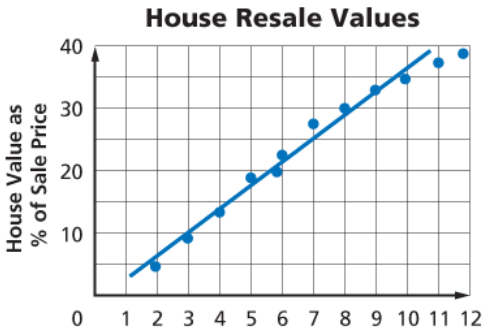
d. Salary increases with each graduate class.

Example 2

SALES Use the scatter plot at the right for these questions.

a. What can you ay about the correlation between the age of a house and its resale value?

b. Predict the resale value of a 10-year-old house with an original cost of $150,000.



Solution

a. The trend slopes upward from lower left to upper right, so there is a positive correlation between a house's age and its resale value.

b. Using the scatter plot, a reasonable assumption would be for the resale value to be about 35% higher than the original cost of a 10-year-old house. So, a house that cost $150,000 originally, might sell for about $202,500 after 10 years.

Example 3

SPORTS A minor league baseball player, Tom Smith, has played on the team for 11 years. During each year of his career he hit the following number of home runs: 17, 22, 27, 36, 37, 21, 23, 12, 54, 34, and 29. Make a box-and-whisker plot for this data.

Solution

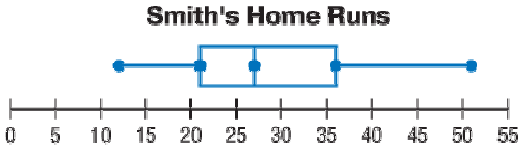
Write the data in numerical order. Find the least and greatest values, the median and lower quartile, and the upper quartile.

least value □ median □ greatest value □

12 17 21 22 23 27 29 34 36 37 54

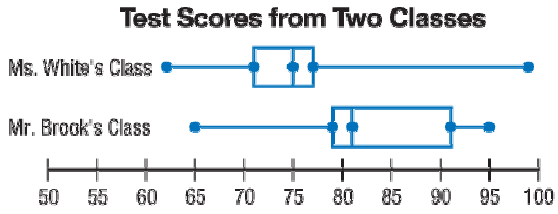
□ lower quartile □ upper quartile

Use point so mark the values below a number line. Draw a box around the upper and lower quartiles, and a vertical line at the point for the median. Then draw whiskers, or line segments, from each end of the box to the least and greatest values. Finally, give your graph a title.



Example 4

Use the box and whisker plots below to answer questions about the science test and scores of two different classes.



a. Which class had the higher median score?

b. What was the lower quartile in Ms. White's class?

c. Which class had its scores grouped more closely around its median?

d. For which class were the lowest scores clustered more closely?

e. Which class, as a whole, scored better on the test?

Solution

a. Mr. Brook's, 81

b. 71

c. Ms. White's; the range of the middle 50% of the scores is 6. The range for the middle 50% in Mr. Brook's class is 11.

d. Ms. White's. the range is 9. In Mr. Brook's class, it is 13

e. Mr. Brook's