

EXERCISES

For more exercises, see *Extra Skill and Word Problem Practice*.

Practice and Problem Solving

A Practice by Example



Example 1
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Find the median, the first quartile, and the third quartile.

- 12 10 11 7 9 10 5
- 4.5 3.2 6.3 5.2 5 4.8 6 3.9 12
- 55 53 67 52 50 49 51 52 52
- 101 100 100 105 101 102 104

5. Find the five number summary for the set of data.

1 1 3 3 4 5 7 7 8 9 9 32 31 29 35 30 32 11

6. Of 20 scores, 19 are less than or equal to 10. Find the percentile rank of 10.

7. Gerry ranks 48th in a class of 120 students. What is his percentile rank?

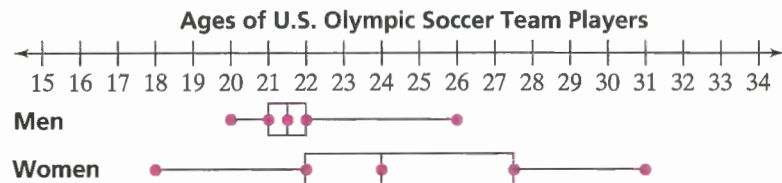
8. Construct a box-and-whisker plot for the ages of the members of the art club.

13 18 16 14 15 17 15 16 16 15 16 14 14 17 19

9. Use a graphing calculator to draw a box-and-whisker plot for the data below. Then find the interquartile range.

16 18 59 75 30 34 25 49 27 16 21 58 71 19 50

10. Compare the box-and-whisker plots below. What can you conclude?



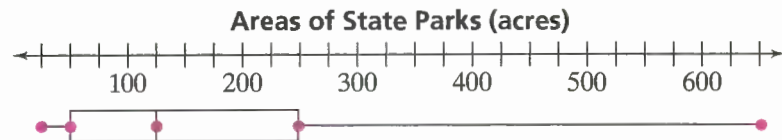
B Apply Your Skills

For Exercises 11–16, use the data below. Find each measure.

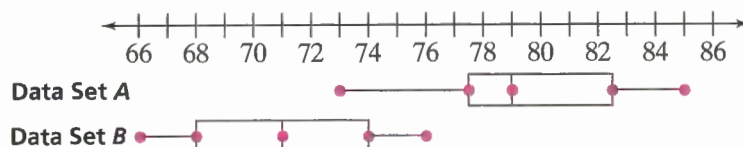
1.8 2.5 3.9 4.6 4.7 4.8 4.8 4.9

11. median
12. first quartile
13. minimum
14. maximum
15. third quartile
16. percentile rank of 4.6

17. Use the box-and-whisker plot below. What can you conclude about the areas of state parks?



For Exercises 18–21, use the graph below showing box-and-whisker plots for two sets of data, A and B.



18. Which set of data has the greater range?
19. Which set of data has the lesser median?

20. Which set of data has the greater interquartile range?

21. Which set of data has the lesser minimum?

For Exercises 22–24, use the five number summary given below.

Minimum = 10 $Q_1 = 20$ Median = 30 $Q_3 = 42$ Maximum = 75

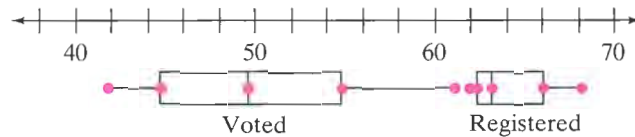
22. Find the interquartile range.

23. Find the range of the data.

24. Use the data to construct a box-and-whisker plot.

25. **Social Studies** The plots below compare the percents of the voting-age population who said they registered to vote in U.S. elections to the percents who said they voted. Which conclusion best reflects the data collected?

Percents of Population Who Registered and Voted, 1990–2000



- A. The percent who voted was about 15% less than the percent who registered.
- B. The percent who voted was about half the percent who registered.
- C. The percent who voted was equal to the percent who registered.
- D. The percent who voted was about 15% more than the percent who registered.

26. **Error Analysis** In a class of 250 students, Emily had the tenth highest grade average. She computed her percentile rank as 4. What was her error?

C Challenge

27. **Reasoning** Can you find the mean, median, and mode of a set of data by looking at a box-and-whisker plot? Explain.



Multiple Choice

28. Find the first quartile and third quartile in the following data set.

17 20 30 19 20 18 25 28 31 23 17 29 31 33 28

- A. 19 and 30
- B. 17 and 25
- C. 19.5 and 30.5
- D. 17 and 33

29. Of 20 test scores, sixteen are less than or equal to 80. What is the percentile rank of a test score of 80?

- F. 16th
- G. 85th
- H. 25th
- J. 80th

Short Response

30. Describe how you could find the 75th percentile score in a set of 20 scores.

Mixed Review

Lesson 1-1

Define variables and write an equation to model each situation.

31. The total cost of the number of CDs times \$5.00.

32. The perimeter of a square equals 4 times the length of the side.

Lesson 1-3

Decide whether each statement is true or false. If the statement is false, give the counterexample.

33. All whole numbers are rational numbers.

34. The square root of a number is always smaller than the number.