PRACTICE & PROBLEM SOLVING

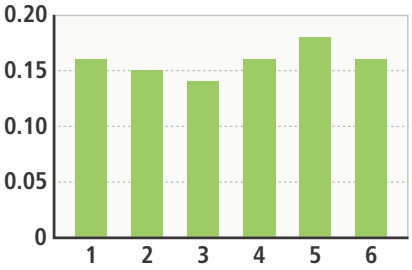
Scan for Multimedia

Practice Tutorial

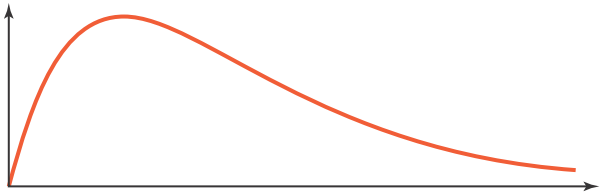
Additional Exercises Available Online

UNDERSTAND

9. Communicate Precisely Describe a situation that is likely to produce the following data distribution.



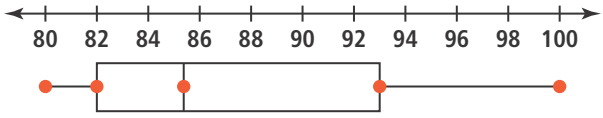
10. Error Analysis Maurice's teacher asked him to compare the mean and median of the data distribution. Explain and correct Maurice's error in comparing the mean and median.



The distribution is skewed right.

This implies the mean is less than the median. ✗

11. Higher Order Thinking Dale drew the following box plot to represent a data set.



a. Identify the five-number summary of the data.

b. Explain how to use the five-number summary to write a data set with 14 data values to match the box plot. Then write such a data set.

PRACTICE

Find the mean, standard deviation, and five-number summary of each data set. Round to the nearest tenth, if necessary. SEE EXAMPLE 1

12. 9, 15, 17, 21, 23, 31, 33, 39, 46, 50

13. 35, 12, 25, 33, 27, 48, 30, 34, 35, 41, 14

14. 9, 24, 10, 11, 5, 16, 18, 30, 19, 22, 12, 28, 9, 33

For each set of data, describe the shape of the distribution and determine which measures of center and spread best represent the data. SEE EXAMPLE 2

15. 28, 13, 23, 34, 55, 38, 44, 65, 49, 33, 50, 59, 67, 45

16. 3.1, 2.3, 8.8, 2.8, 3.2, 3.5, 3.9, 4.3, 4.5, 2.9, 3.9, 5.5

17. 12, 2, 14, 4, 1, 6, 11, 7, 8, 5, 9, 10, 8, 15

Determine if each situation is likely to be uniformly distributed, normally distributed, skewed left, or skewed right. SEE EXAMPLE 3

18. The age at which people die in the United States

19. number of pets owned by students at your school

20. Selling price of cars in 2018

21. The height of all adult females in Connecticut

Determine the type of distribution and the best measure of center and spread of each data set. Round to the nearest hundredth, if necessary. SEE EXAMPLE 4

22. 3, 6, 12, 14, 17, 17, 18, 21, 21, 22, 23, 28

23. 17, 9, 27, 13, 15, 19, 19, 21, 11, 23, 17, 25

24. 7.8, 4.9, 5.7, 24.2, 3.3, 6.2, 9.1, 10.6, 11.9, 3.9, 12.3, 17.2, 18

25. 53, 24, 65, 26, 60, 32, 41, 7, 44, 49, 50, 52, 55, 46

APPLY

26. **Make Sense and Persevere** The test scores from a history test are 88, 95, 92, 60, 86, 78, 95, 98, 92, 96, 70, 80, 89, and 96.

a. Find the mean and standard deviation of the test scores.

b. Find the five-number summary of the test scores.

c. Describe the type of distribution. Explain.

d. Do you think the test was an easy test or a hard test for these students? Explain.

27. **Reason** The salaries of some employees at a company are shown.

a. Describe the type of distribution.

b. Find an appropriate measure of center and measure of spread. Explain your choice.

28. A real estate agent wants to convince a client to raise the asking price on his home so she can earn a higher commission. Based on the data shown, should she tell her client the mean or median home price? Explain.

ASSESSMENT PRACTICE

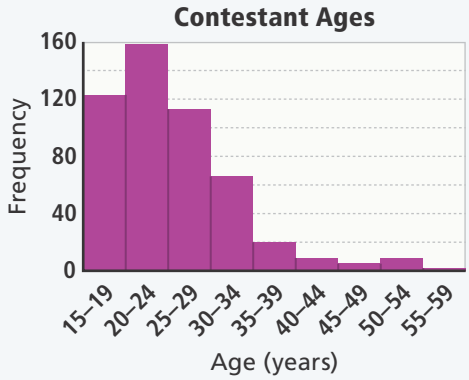
29. Does each five-number summary represent a data distribution that is normally distributed? Check *Yes* or *No*.

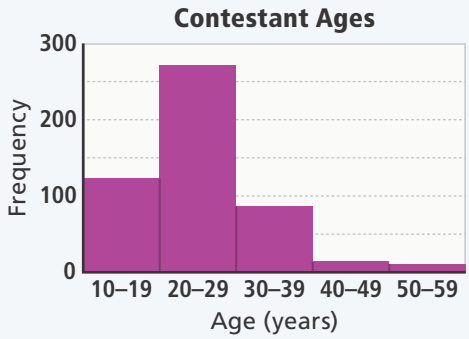
	Yes	No		Yes	No
2; 7; 8; 9; 10	❑	❑	1; 5; 9; 13; 17	❑	❑
2; 4; 6; 8; 10	❑	❑	1; 5; 6; 7; 9	❑	❑

30. **SAT/ACT** How are the data representing the age of people who purchased movie tickets at a senior citizen discount likely to be distributed?

Ⓐ uniformly distributed Ⓑ skewed right
Ⓒ normally distributed Ⓓ skewed left

31. **Performance Task** A voice coach looks up the ages of all the contestants on a popular singing competition and creates two graphs by grouping the data differently.





Part A Describe the shape of the data. How would you expect the mean and median to compare?

Part B Which graph would be better to convince students that they should continue singing lessons into 20s? Which graph would be better to convince students to continue lessons into their 30s?