

# Measures of Center, Spread & Data Sets

## Foundation to Challenge

**Practice should make the test feel easier, not merely familiar.**

Work without the answer key first. When you finish, use the QR code on the final page to check your answers online.

### FOUNDATION

- 1 What is the mean of the values 8, 11, 14, 17, and 20?

- 2 The mean of 9, 14, 17, 20, and  $x$  is 16. What is the value of  $x$ ?

- 3 What is the median of 3, 7, 8, 12, 13, 15, and 19?

- A. 8
- B. 10
- C. 12
- D. 13

- 4 What is the range of the data set 18, 22, 27, 31, 35?

- 5 Twelve workers have an average commute of 46 minutes. Eighteen other workers have an average commute of 52 minutes. What is the average commute for all 30 workers?
- A. 48.4
  - B. 49.0
  - C. 49.6
  - D. 50.2

- 6 A data set of 8 values has mean 24. A ninth value, 42, is added. What is the mean of the new data set?

- 7 The data set 10, 11, 12, 13, 14, 15, 42 is changed by replacing 42 with 16. Which measure stays the same?
- A. Mean
  - B. Median
  - C. Range
  - D. Standard deviation

- 8 The same constant 7 is added to every value in a data set. Which statement must be true?
- A. The mean increases by 7 and the standard deviation increases by 7.
  - B. The mean and median increase by 7, while the standard deviation stays the same.
  - C. The median stays the same and the standard deviation increases by 7.
  - D. The mean, median, and standard deviation all stay the same.

- 9 Every value in a data set is multiplied by 2.5. How does the standard deviation change?
- A. It stays the same.
  - B. It increases by 2.5.
  - C. It is multiplied by 2.5.
  - D. It is multiplied by 6.25.

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Group A has values 48, 49, 50, 51, 52. Group B has values 40, 45, 50, 55, 60. Which statement is true?

A. The groups have the same mean and the same standard deviation.

B. The groups have the same mean, but Group B has the larger standard deviation.

C. Group A has the larger mean and larger standard deviation.

D. Group B has the larger mean, but Group A has the larger standard deviation.

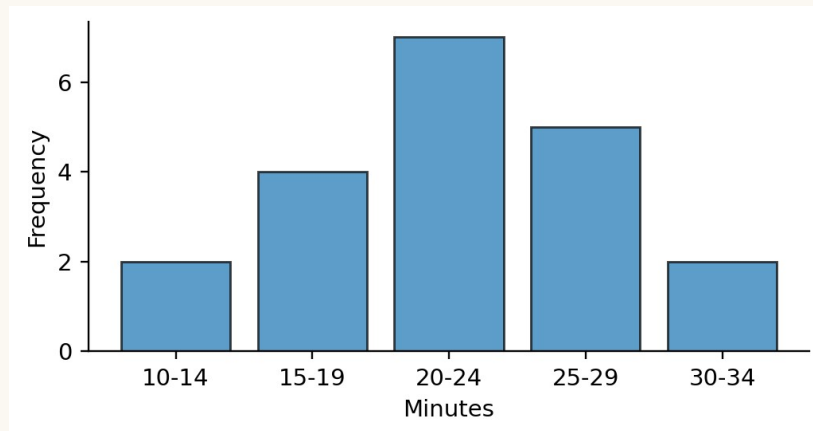
ADVANCED

11

The frequency table represents a data set. What is the mean of the data set?

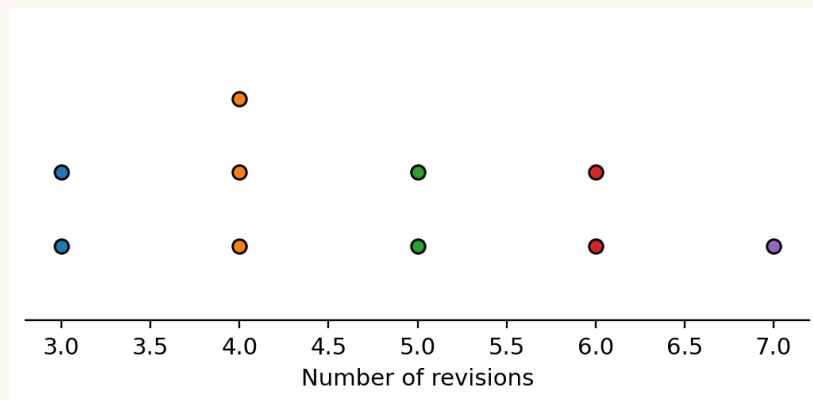
|           |   |   |   |   |
|-----------|---|---|---|---|
| Value     | 2 | 4 | 6 | 8 |
| Frequency | 1 | 3 | 4 | 2 |

- 12 The histogram shows the distribution of 20 response times. In which interval must the median lie?



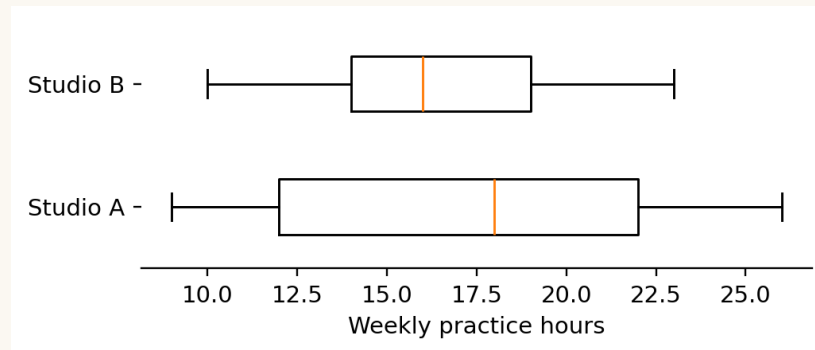
- A. 15-19 minutes
- B. 20-24 minutes
- C. 25-29 minutes
- D. 30-34 minutes

- 13 The dot plot shows the number of revisions made to 10 documents. What is the mean number of revisions?



- 14 The data set is 20, 21, 22, 22, 23, 24, 35. If the largest value is removed, which measure is unchanged?
- A. Mean
  - B. Median
  - C. Range
  - D. Standard deviation

- 15 The box plots compare weekly practice hours for two studios. Which statement must be true?



- A. Studio A has a greater median and a greater interquartile range.
- B. Studio A has a smaller median and a greater interquartile range.
- C. Studio B has a greater median and a greater interquartile range.
- D. The means must be equal.

### CHALLENGE

- 16 The scores  $x - 6$ ,  $x - 2$ ,  $x + 3$ ,  $x + 8$ , and  $x + 12$  have a mean of 28. What is the median of the five scores?

- 17 The six values 12, 15, 18, 22, 25, and  $k$  have a mean of 20. What is the median of the six values?

- 18** Group A contains 16 observations with mean 72. Group B contains 24 observations with mean 78. What is the mean of all 40 observations?
- A. 74.4
  - B. 75.0
  - C. 75.6
  - D. 76.2

## Check your answers online.

The public practice PDF contains questions only. The answer check lives on the website so you can review your score, identify the kind of mistake you made, and move to the next resource.



### ANSWER CHECK

## Center & Spread

Scan the QR code or visit:

<https://aryalanupme.github.io/sat-center-spread.html>

If you are stuck on one question, note the question number and the approach you tried before checking another solution.

### Independent resource

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