

Question ID 72c5e5dd

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 72c5e5dd

4, 4, 4, 4, 8, 8, 8, 13, 13

Which frequency table correctly represents the data listed?

- A.

Number	Frequency
4	4
8	3
13	2
- B.

Number	Frequency
4	4
3	8
2	13
- C.

Number	Frequency
4	16
8	24
13	26
- D.

Number	Frequency
16	4
24	8
26	13

ID: 72c5e5dd Answer

Correct Answer: A

Rationale

Choice A is correct. A frequency table is a table that lists the data value and shows the number of times the data value occurs. In the data listed, the number 4 occurs four times, the number 8 occurs three times, and the number 13 occurs two times. This corresponds to the table in choice A.

Choice B is incorrect. This table has the values for number and frequency reversed.

Choice C is incorrect because the frequency values don't represent the data listed.

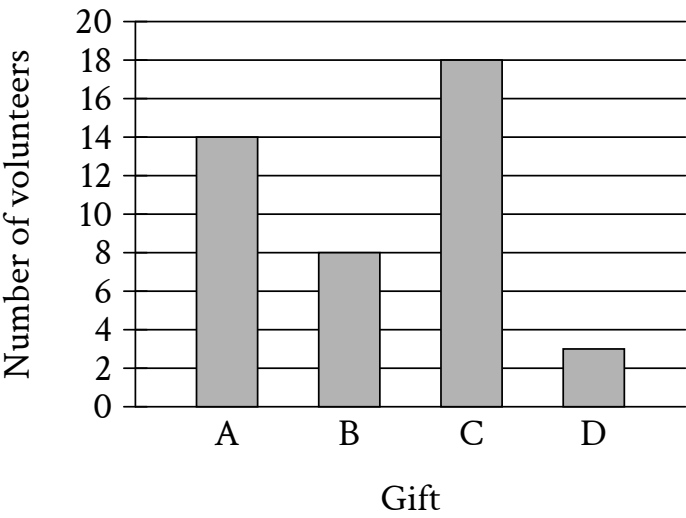
Choice D is incorrect. This table represents the listed number values as the frequency values.

Question Difficulty: Easy

Question ID 09a0ecd6

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 09a0ecd6



In April, there were ~~43~~ volunteers in a cleanup project. Each volunteer was asked to choose a small gift labeled A, B, C, or D. The bar graph shows the number of volunteers who chose each gift. How many volunteers chose gift C?

- A. 3
- B. 8
- C. 14
- D. 18

ID: 09a0ecd6 Answer

Correct Answer: D

Rationale

Choice D is correct. The height of each bar in the graph shown represents the number of volunteers who chose the gift labeled with the letter specified at the bottom of the bar. The bar for gift C has a height of 18. Therefore, 18 volunteers chose gift C.

Choice A is incorrect. This is the number of volunteers who chose gift D, not gift C.

Choice B is incorrect. This is the number of volunteers who chose gift B, not gift C.

Choice C is incorrect. This is the number of volunteers who chose gift A, not gift C.

Question Difficulty: Easy

Question ID 573d3cbf

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 573d3cbf

71, 72, 73, 76, 77, 79, 83, 87, 93
What is the median of the data shown?

- A. 71
- B. 77
- C. 78
- D. 79

ID: 573d3cbf Answer

Correct Answer: B

Rationale

Choice B is correct. The median of a data set with an odd number of data values is defined as the middle value of the ordered list of values. The data set shown has nine values, so the median is the fifth value in the ordered list, which is 77.

Choice A is incorrect. This is the minimum value of the data set, not the median.

Choice C is incorrect and may result from conceptual or calculation errors.

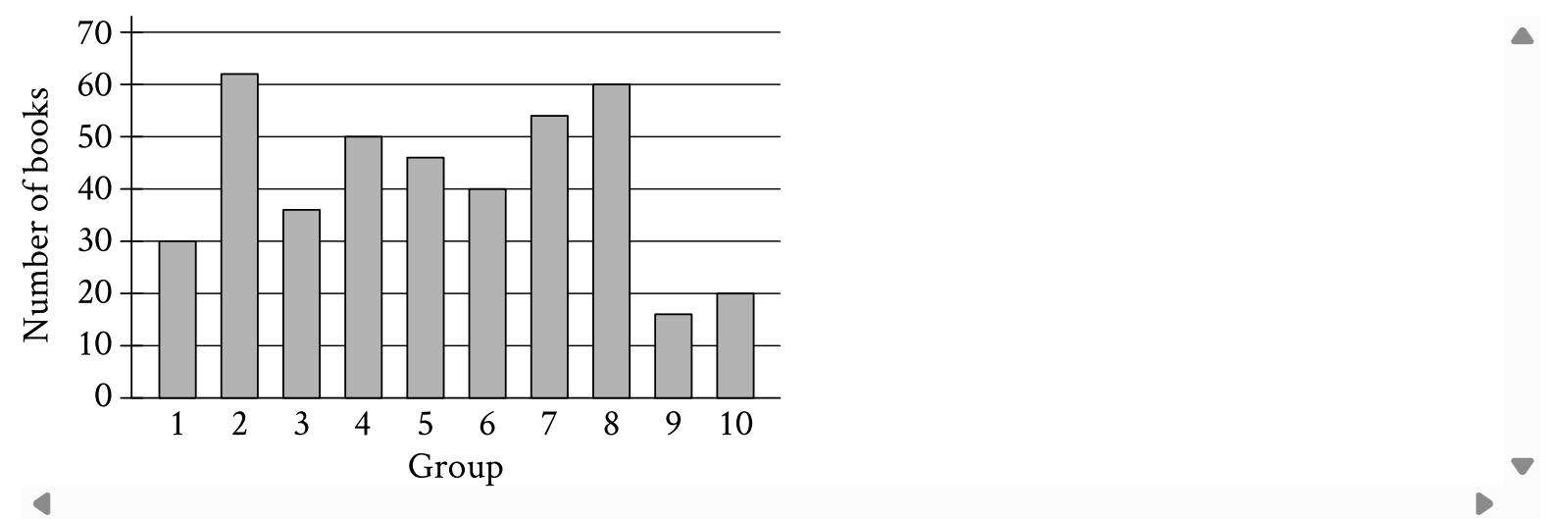
Choice D is incorrect. This is the mean of the data set, not the median.

Question Difficulty: Easy

Question ID 88de9ee2

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 88de9ee2



The bar graph shows the distribution of **414** books collected by **10** different groups for a book drive. How many books were collected by group **1**?

ID: 88de9ee2 Answer

Correct Answer: 30

Rationale

The correct answer is 30. The height of each bar in the bar graph shown represents the number of books collected by the group specified at the bottom of the bar. The bar for group 1 reaches a height of 30. Therefore, group 1 collected 30 books.

Question Difficulty: Easy

Question ID 21f398ee

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 21f398ee



The box plot summarizes **15** data values. What is the median of this data set?

- A. **2**
- B. **3**
- C. **5**
- D. **8**

ID: 21f398ee Answer

Correct Answer: C

Rationale

Choice C is correct. The median of a data set represented in a box plot is given by the vertical line within the box. In the given box plot, the vertical line within the box occurs at 5. Therefore, the median of this data set is 5.

Choice A is incorrect. This is the minimum value of the data set.

Choice B is incorrect and may result from conceptual errors.

Choice D is incorrect. This is the maximum value of the data set.

Question Difficulty: Easy

Question ID a9fae561

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: a9fae561

Response	Frequency
Once a week or more	3
Two or three times a month	16
About once a month	26
A few times a year	73
Almost never	53
Never	29
Total	200

The table gives the results of a survey of **200** people who were asked how often they see a movie in a theater. How many people responded either “never” or “almost never”?

- A. **24**
- B. **53**
- C. **82**
- D. **118**

ID: a9fae561 Answer

Correct Answer: C

Rationale

Choice C is correct. The table gives the results of 200 people who were asked how often they see a movie in a theater. The table shows that 29 people responded “never” and 53 people responded “almost never.” Therefore, $29 + 53$, or 82, people responded either “never” or “almost never.”

Choice A is incorrect. This is the difference between the number of people who responded “almost never” and the number of people who responded “never.”

Choice B is incorrect. This is the number of people who responded “almost never” but doesn't include those who responded “never.”

Choice D is incorrect. This is the number of people who responded something other than “never” or “almost never,” rather than the number of people who responded either “never” or “almost never.”

Question Difficulty: Easy

Question ID f99fee2a

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: f99fee2a

73, 74, 75, 77, 79, 82, 84, 85, 91
What is the median of the data shown?

ID: f99fee2a Answer

Correct Answer: 79

Rationale

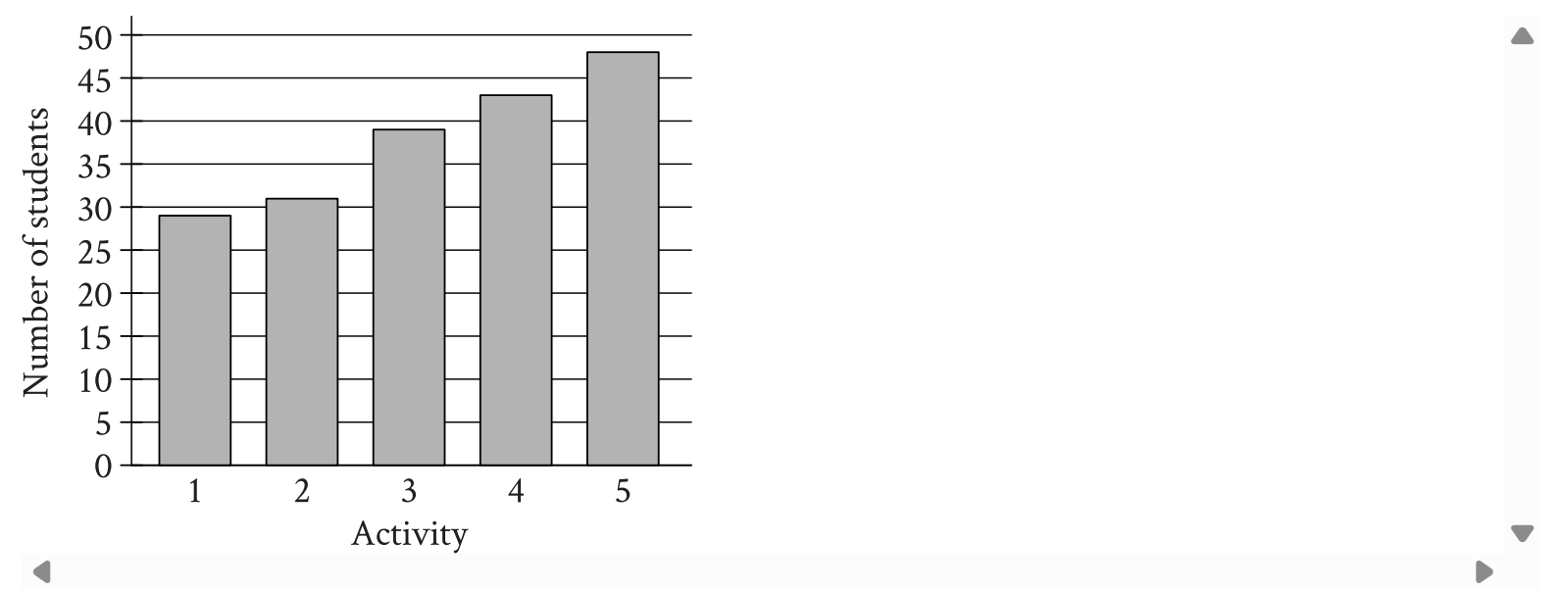
The correct answer is 79. The median of a data set with an odd number of values is the middle value of the set when the values are ordered from least to greatest. Because the given data set consists of nine values that are ordered from least to greatest, the median is the fifth value in the data set. Therefore, the median of the data shown is 79.

Question Difficulty: Easy

Question ID 73f42b7a

Assessment	Test	Domain	Skill	Difficulty
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ID: 73f42b7a



A group of students voted on five after-school activities. The bar graph shows the number of students who voted for each of the five activities. How many students chose activity **3**?

- A. **25**
- B. **39**
- C. **48**
- D. **50**

ID: 73f42b7a Answer

Correct Answer: B

Rationale

Choice B is correct. The height of each bar in the bar graph given represents the number of students that voted for the activity specified at the bottom of the bar. The bar for activity 3 has a height that is between 35 and 40. In other words, the number of students that chose activity 3 is between 35 students and 40 students. Of the given choices, 39 is the only value between 35 and 40. Therefore, 39 students chose activity 3.

Choice A is incorrect and may result from conceptual errors.

Choice C is incorrect. This is the number of students that chose activity 5, not activity 3.

Choice D is incorrect and may result from conceptual errors.

Question ID 0c9a623e

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 0c9a623e

Data set X: 5, 9, 9, 13
Data set Y: 5, 9, 9, 13, 27

The lists give the values in data sets X and Y. Which statement correctly compares the mean of data set X and the mean of data set Y?

- A. The mean of data set X is greater than the mean of data set Y.
- B. The mean of data set X is less than the mean of data set Y.
- C. The means of data set X and data set Y are equal.
- D. There is not enough information to compare the means.

ID: 0c9a623e Answer

Correct Answer: B

Rationale

Choice B is correct. The mean of a data set is the sum of the values in the data set divided by the number of values in the data set. It follows that the mean of data set X is $\frac{5 + 9 + 9 + 13}{4}$, or 9, and the mean of data set Y is $\frac{5 + 9 + 9 + 13 + 27}{5}$, or 12.6. Since 9 is less than 12.6, the mean of data set X is less than the mean of data set Y.

Alternate approach: Data set Y consists of the 4 values in data set X and one additional value, 27. Since the additional value, 27, is larger than any value in data set X, the mean of data set X is less than the mean of data set Y.

- Choice A is incorrect and may result from conceptual or calculation errors.
- Choice C is incorrect and may result from conceptual or calculation errors.
- Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID ced14ecd

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: ced14ecd

6, 6, 8, 8, 8, 10, 21

Which of the following lists represents a data set that has the same median as the data set shown?

- A. 4, 6, 6, 6, 8, 8
- B. 6, 6, 8, 8, 10, 10
- C. 6, 8, 10, 10, 10, 12
- D. 8, 8, 10, 10, 21, 21

ID: ced14ecd Answer

Correct Answer: B

Rationale

Choice B is correct. If a data set contains an odd number of data values, the median is represented by the middle data value in the list when the data values are listed in ascending or descending order. Since the data set shown has 7 data values and is in ascending order, it follows that the median is the fourth data value in the list, or 8. If a data set contains an even number of data values, the median is between the two middle data values when the values are listed in ascending or descending order. Since each of the choices consists of a data set with 6 data values in ascending order, it follows that the median is between the third and fourth data value. The third and fourth data values in choice B are 8 and 8. Thus, choice B represents a data set with a median of 8. Since the median of the data set shown is 8 and choice B represents a data set with a median of 8, it follows that choice B represents a data set that has the same median as the data set shown.

Choice A is incorrect. This list represents a data set with a median of 6, not 8.

Choice C is incorrect. This list represents a data set with a median of 10, not 8.

Choice D is incorrect. This list represents a data set with a median of 10, not 8.

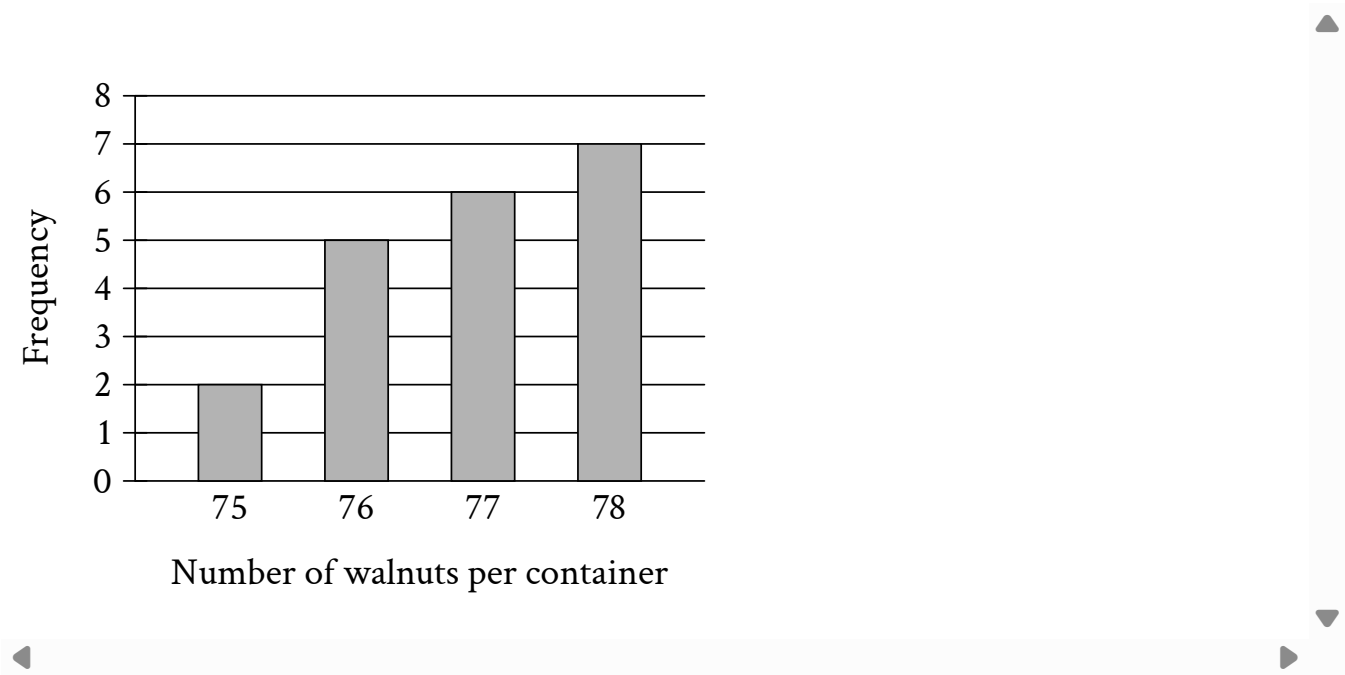
Question Difficulty: Easy

Question ID 4bb1ac93

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: 4bb1ac93

The bar graph shows the distribution of the number of walnuts per container for **20** containers at a grocery store.



How many of these containers of walnuts contain exactly **78** walnuts?

- A. **2**
- B. **7**
- C. **20**
- D. **78**

ID: 4bb1ac93 Answer

Correct Answer: B

Rationale

Choice B is correct. The height of each bar in the graph shown represents the number of containers that contain the number of walnuts specified at the bottom of the bar. The bar for 78 walnuts has a height of 7. Therefore, 7 of these containers of walnuts contain exactly 78 walnuts.

Choice A is incorrect. This is the number of containers that contain exactly 75 walnuts, not 78 walnuts.

Choice C is incorrect. This is the total number of containers of walnuts represented in the bar graph, not the number that contain exactly 78 walnuts.

Choice D is incorrect. This is the number of walnuts in a container that contains exactly 78 walnuts, not the number of containers that contain exactly 78 walnuts.

Question Difficulty: Easy

Question ID 182fa115

Assessment	Test	Domain	Skill	Difficulty
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ID: 182fa115

2, 9, 14, 23, 32

What is the mean of the data shown?

- A. 14
- B. 16
- C. 17
- D. 32

ID: 182fa115 Answer

Correct Answer: B

Rationale

Choice B is correct. The mean of a set of data values is the sum of all the data values divided by the number of data values in the set. The sum of the data values shown is $2 + 9 + 14 + 23 + 32$, or 80. Since there are 5 data values in the set, the mean of the data shown is $\frac{80}{5}$, or 16.

Choice A is incorrect. This is the median, not the mean, of the data shown.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect. This is the maximum, not the mean, of the data shown.

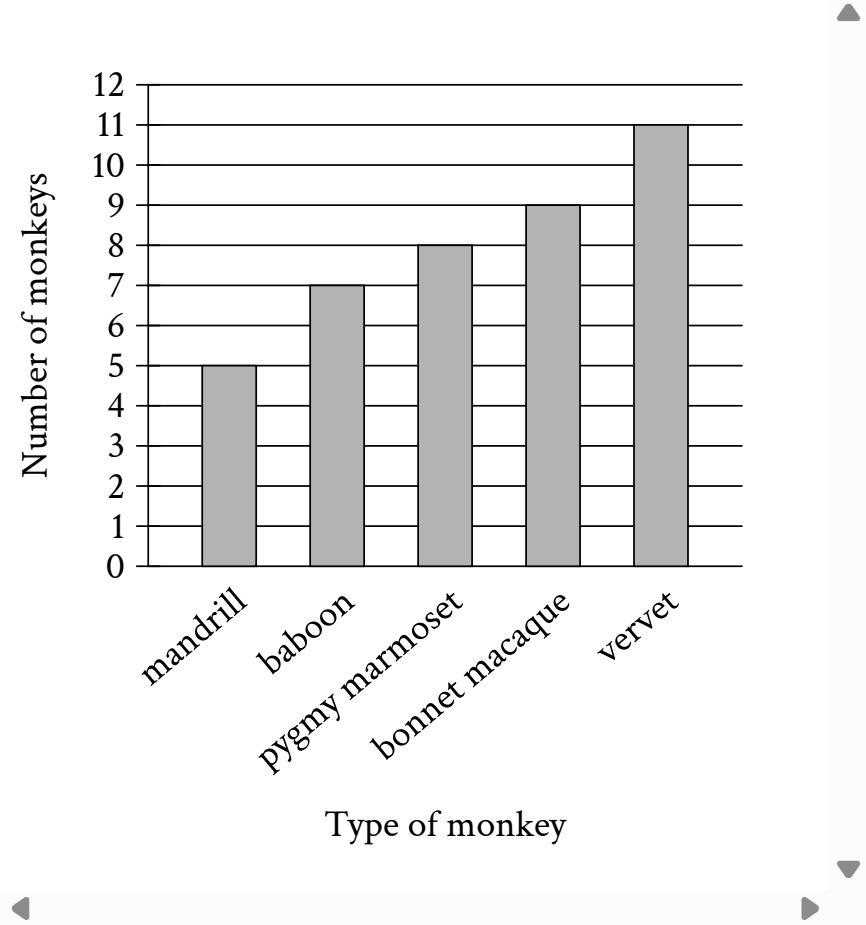
Question Difficulty: Easy

Question ID 5dea66f2

Assessment	Test	Domain	Skill	Difficulty
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ID: 5dea66f2

The bar graph shows the number of each type of monkey in a sanctuary.



How many more vervets are in this sanctuary than mandrills?

- A. 11
- B. 6
- C. 5
- D. 3

ID: 5dea66f2 Answer

Correct Answer: B

Rationale

Choice B is correct. It's given that the bar graph shows the number of each type of monkey in a sanctuary. The bar representing the number of mandrills has a height of 5; therefore, there are 5 mandrills in the sanctuary. The bar representing vervets has a height of 11; therefore, there are 11 vervets in the sanctuary. Therefore, there are $11 - 5$, or 6, more vervets in this sanctuary than mandrills.

Choice A is incorrect. This is the number of vervets in the sanctuary.

Choice C is incorrect. This is the number of mandrills in the sanctuary.

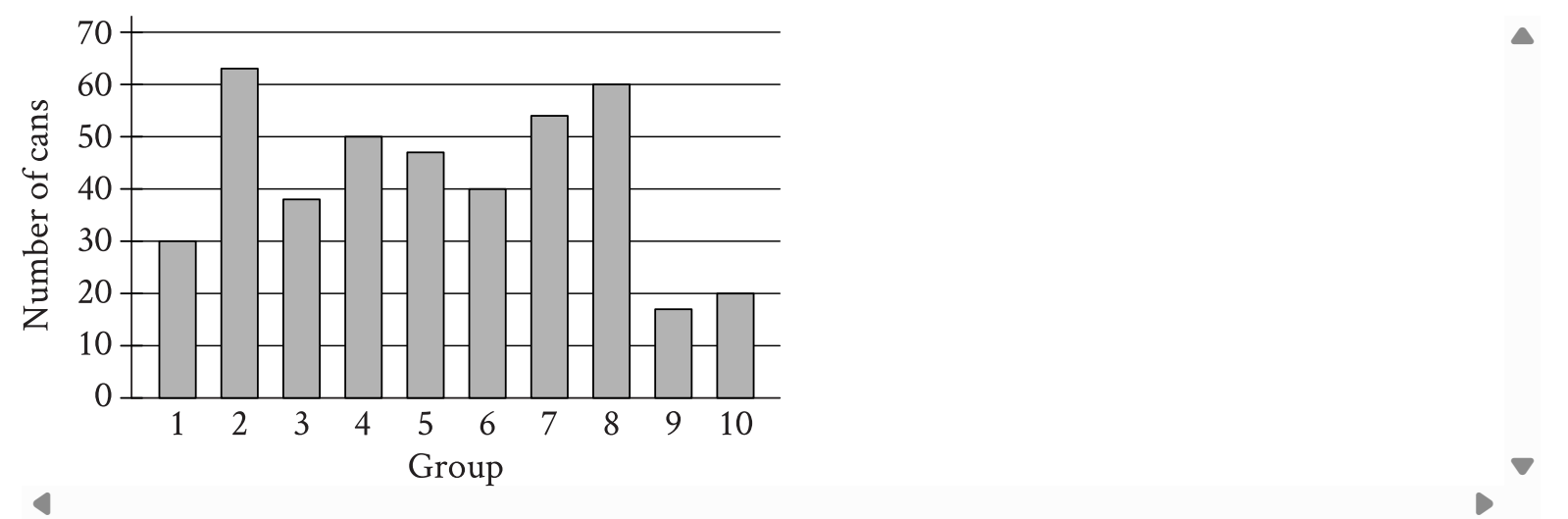
Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID de34ffaa

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	

ID: de34ffaa



The bar graph shows the distribution of **419** cans collected by **10** different groups for a food drive. How many cans were collected by group **6**?

ID: de34ffaa Answer

Correct Answer: 40

Rationale

The correct answer is 40. The height of each bar in the bar graph shown represents the number of cans collected by the group specified at the bottom of the bar. The bar for group 6 reaches a height of 40. Therefore, group 6 collected 40 cans.

Question Difficulty: Easy