

# Question ID 9198f2d6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 9198f2d6

The table shown summarizes the number of employees at each of the **17** restaurants in a town.

Number of employees	Number of restaurants
2 to 7	2
8 to 13	4
14 to 19	2
20 to 25	7
26 to 31	2

Which of the following could be the median number of employees for the restaurants in this town?

- A. 2
- B. 9
- C. 15
- D. 21

ID: 9198f2d6 Answer

Correct Answer: D

Rationale

Choice D 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 numbers of employees are given as ranges of values rather than specific values, it's only possible to determine the range in which the median falls, rather than the exact median. Since there are **17** restaurants included in the data set and the numbers of employees are listed in ascending order, it follows that the median number of employees will be represented by the ninth restaurant in the list. Since the first **2** restaurants each have **2 to 7** employees, numbers of employees in the **2 to 7** range would be represented by the first and second restaurants in the list. The next **4** restaurants each have **8 to 13** employees. Therefore, numbers of employees in the **8 to 13** range will be represented by the third through sixth restaurants in the list. The next **2** restaurants each have **14 to 19** employees. Therefore, numbers of employees in the **14 to 19** range will be represented by the seventh and eighth restaurants in the list. Since the next **7** restaurants each have **20 to 25** employees, numbers of employees in the **20 to 25** range will be represented by the ninth through fifteenth restaurants in the list. This means that the ninth restaurant

in the list, which has the median number of employees for the restaurants in this town, has a number of employees in the **20** to **25** range. Of the given choices, the only number of employees in the **20** to **25** range is **21**.

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

Choice B is incorrect. This is the position of the median in the list, not the value of the median.

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

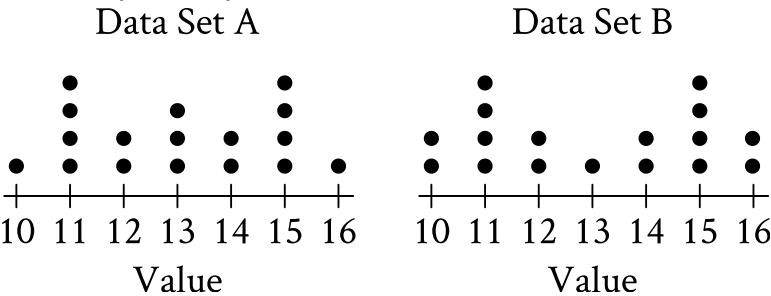
Question Difficulty: Hard

Question ID 3f24389a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 3f24389a

The dot plots represent the distributions of values in data sets A and B.



Which of the following statements must be true?

- I. The median of data set A is equal to the median of data set B.
  - II. The standard deviation of data set A is equal to the standard deviation of data set B.
- A. I only
- B. II only
- C. I and II
- D. Neither I nor II

ID: 3f24389a Answer

Correct Answer: A

Rationale

Choice A is correct. The median of a data set with an odd number of values that are in ascending or descending order is the middle value of the data set. Since the distribution of the values of both data set A and data set B form symmetric dot plots, and each data set has an odd number of values, it follows that the median is given by the middle value in each of the dot plots. Thus, the median of data set A is **13**, and the median of data set B is **13**. Therefore, statement I is true. Data set A and data set B have the same frequency for each of the values **11**, **12**, **14**, and **15**. Data set A has a frequency of **1** for values **10** and **16**, whereas data set B has a frequency of **2** for values **10** and **16**. Standard deviation is a measure of the spread of a data set; it is larger when there are more values further from the mean, and smaller when there are more values closer to the mean. Since both distributions are symmetric with an odd number of values, the mean of each data set is equal to its median. Thus, each data set has a mean of **13**. Since more of the values in data set A are closer to **13** than data set B, it follows that data set A has a smaller standard deviation than data set B. Thus, statement II is false. Therefore, only statement I must be true.

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

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

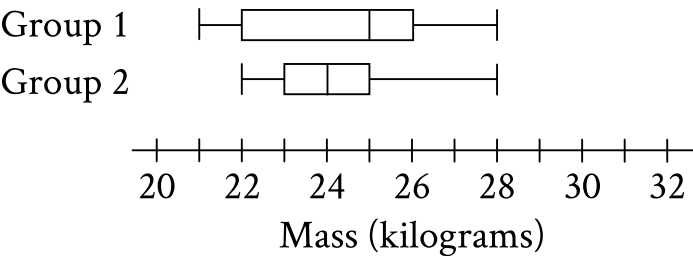
Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Hard

Question ID 6a18e6b3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 6a18e6b3



The box plots summarize the masses, in kilograms, of two groups of gazelles. Based on the box plots, which of the following statements must be true?

- A. The mean mass of group 1 is greater than the mean mass of group 2.
- B. The mean mass of group 1 is less than the mean mass of group 2.
- C. The median mass of group 1 is greater than the median mass of group 2.
- D. The median mass of group 1 is less than the median mass of group 2.

ID: 6a18e6b3 Answer

Correct Answer: C

Rationale

Choice C is correct. The median of a data set represented in a box plot is represented by the vertical line within the box. It follows that the median mass of the gazelles in group 1 is 25 kilograms, and the median mass of the gazelles in group 2 is 24 kilograms. Since 25 kilograms is greater than 24 kilograms, the median mass of group 1 is greater than the median mass of group 2.

Choice A is incorrect. The mean mass of each of the two groups cannot be determined from the box plots.

Choice B is incorrect. The mean mass of each of the two groups cannot be determined from the box plots.

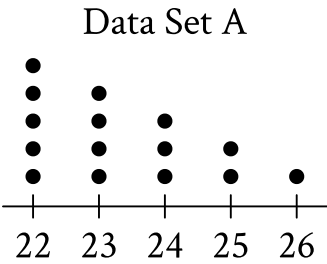
Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Hard

Question ID 561942c8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 561942c8



The dot plot represents the **15** values in data set A. Data set B is created by adding **56** to each of the values in data set A. Which of the following correctly compares the medians and the ranges of data sets A and B?

- A. The median of data set B is equal to the median of data set A, and the range of data set B is equal to the range of data set A.
- B. The median of data set B is equal to the median of data set A, and the range of data set B is greater than the range of data set A.
- C. The median of data set B is greater than the median of data set A, and the range of data set B is equal to the range of data set A.
- D. The median of data set B is greater than the median of data set A, and the range of data set B is greater than the range of data set A.

ID: 561942c8 Answer

Correct Answer: C

Rationale

Choice C is correct. The median of a data set with an odd number of values, in ascending or descending order, is the middle value of the data set, and the range of a data set is the positive difference between the maximum and minimum values in the data set. Since the dot plot shown gives the values in data set A in ascending order and there are **15** values in the data set, the eighth value in data set A, **23**, is the median. The maximum value in data set A is **26** and the minimum value is **22**, so the range of data set A is **26 — 22**, or **4**. It's given that data set B is created by adding **56** to each of the values in data set A. Increasing each of the **15** values in data set A by **56** will also increase its median value by **56** making the median of data set B **79**. Increasing each value of data set A by **56** does not change the range, since the maximum value of data set B is **26 + 56**, or **82**, and the minimum value is **22 + 56**, or **78**, making the range of data set B **82 — 78**, or **4**. Therefore, the median of data set B is greater than the median of data set A, and the range of data set B is equal to the range of data set A.

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

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

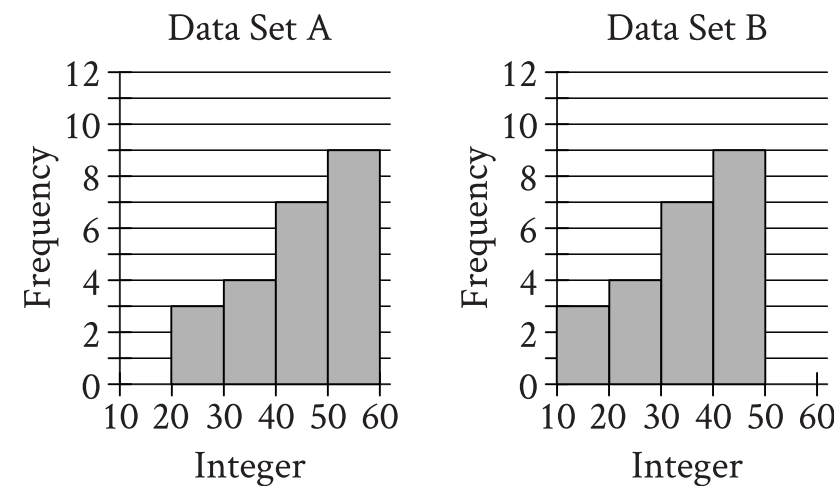
Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Hard

Question ID f95c357a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: f95c357a



Two data sets of **23** integers each are summarized in the histograms shown. For each of the histograms, the first interval represents the frequency of integers greater than or equal to **10**, but less than **20**. The second interval represents the frequency of integers greater than or equal to **20**, but less than **30**, and so on. What is the smallest possible difference between the mean of data set A and the mean of data set B?

- A. 0
- B. 1
- C. 10
- D. 23

ID: f95c357a Answer

Correct Answer: B

Rationale

Choice B is correct. The histograms shown have the same shape, but data set A contains values between **20** and **60** and data set B contains values between **10** and **50**. Thus, the mean of data set A is greater than the mean of data set B. Therefore, the smallest possible difference between the mean of data set A and the mean of data set B is the difference between the smallest possible mean of data set A and the greatest possible mean of data set B. In data set A, since there are **3** integers in the interval greater than or equal to **20** but less than **30**, **4** integers greater than or equal to **30** but less than **40**, **7** integers greater than or equal to **40** but less than **50**, and **9** integers greater than or equal to **50** but less than **60**, the smallest possible mean for data set A is  $\frac{(3 \cdot 20) + (4 \cdot 30) + (7 \cdot 40) + (9 \cdot 50)}{23}$ . In data set B, since there are **3** integers greater than or equal to **10** but less than **20**, **4** integers greater than or equal to **20** but less than **30**, **7** integers greater than or equal to **30**



but less than **40**, and **9** integers greater than or equal to **40** but less than **50**, the largest possible mean for data set B is  $\frac{(3 \cdot 19) + (4 \cdot 29) + (7 \cdot 39) + (9 \cdot 49)}{23}$ . Therefore, the smallest possible difference between the mean of data set A and the mean of data set B is  $\frac{(3 \cdot 20) + (4 \cdot 30) + (7 \cdot 40) + (9 \cdot 50)}{23} - \frac{(3 \cdot 19) + (4 \cdot 29) + (7 \cdot 39) + (9 \cdot 49)}{23}$ , which is equivalent to  $\frac{(3 \cdot 20) - (3 \cdot 19) + (4 \cdot 30) - (4 \cdot 29) + (7 \cdot 40) - (7 \cdot 39) + (9 \cdot 50) - (9 \cdot 49)}{23}$ . This expression can be rewritten as  $\frac{3(20-19) + 4(30-29) + 7(40-39) + 9(50-49)}{23}$ , or  $\frac{23}{23}$ , which is equal to **1**. Therefore, the smallest possible difference between the mean of data set A and the mean of data set B is **1**.

Choice A is incorrect. This is the smallest possible difference between the ranges, not the means, of the data sets.

Choice C is incorrect. This is the difference between the greatest possible mean, not the smallest possible mean, of data set A and the greatest possible mean of data set B.

Choice D is incorrect. This is the smallest possible difference between the sum of the values in data set A and the sum of the values in data set B, not the smallest possible difference between the means.

Question Difficulty: Hard

# Question ID 5192a9a8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 5192a9a8

Data set F consists of **55** integers between **170** and **290**. Data set G consists of all the integers in data set F as well as the integer **10**. Which of the following must be less for data set F than for data set G?

- I. The mean
  - II. The median
- A. I only
- B. II only
- C. I and II
- D. Neither I nor II

ID: 5192a9a8 Answer

Correct Answer: D

Rationale

Choice D is correct. It's given that data set F consists of **55** integers between **170** and **290** and data set G consists of all the integers in data set F as well as the integer **10**. Since the integer **10** is less than all the integers in data set F, the mean of data set G must be less than the mean of data set F. Thus, the mean of data set F isn't less than the mean of data set G. When a data set is in ascending order, the median is between the two middle values when there is an even number of values and the median is the middle value when there is an odd number of values. It follows that the median of data set F is either greater than or equal to the median of data set G. Therefore, the median of data set F isn't less than the median of data set G. Thus, neither the mean nor the median must be less for data set F than for data set G.

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

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

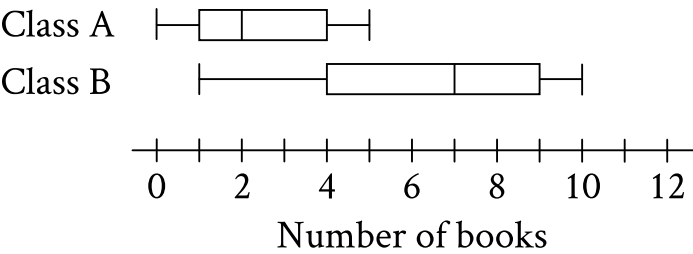
Choice C is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Hard

Question ID 6f43ec88

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 6f43ec88



The two box plots show the distribution of number of books read over the summer by the students in two different English classes. What is the positive difference between the ranges of number of books read over the summer for the two classes?

ID: 6f43ec88 Answer

Correct Answer: 4

Rationale

The correct answer is **4**. It's given that the two boxplots show the distribution of number of books read over the summer by the students in two different English classes. In a boxplot, the first vertical line represents the minimum value of the data set and the last vertical line represents the maximum value of the data set. The range of a data set is the difference between its maximum value and its minimum value. In class A, the maximum number of books read is **5** and the minimum number of books read is **0**. The difference between those values is **5** — **0**, or **5**. Therefore, the range of the number of books read in class A is **5**. In class B, the maximum number of books read is **10** and the minimum number of books read is **1**. The difference between those values is **10** — **1**, or **9**. Therefore, the range of the number of books read in class B is **9**. To find the positive difference between the ranges of the number of books read for the two classes, the smaller range must be subtracted from the larger range. Therefore, the positive difference between the ranges of number of books read over the summer for the two classes is **9** — **5**, or **4**.

Question Difficulty: Hard

# Question ID 8fed560d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 8fed560d

Each of the following frequency tables represents a data set. Which data set has the greatest mean?

A.

Value	Frequency
70	4
80	5
90	6
100	7

B.

Value	Frequency
70	6
80	6
90	6
100	6

C.

Value	Frequency
70	7
80	6
90	6
100	7

D.

Value	Frequency
70	8
80	5
90	5
100	8

Correct Answer: A

Rationale

Choice A is correct. The tables in choices B, C, and D each represent a data set where the values **80** and **90** have the same frequency and the values **70** and **100** have the same frequency. It follows that each of these data sets is symmetric around the value halfway between **80** and **90**, or **85**. When a data set is symmetric around a value, that value is the mean of the data set. Therefore, the data sets represented by the tables in choices B, C, and D each have a mean of **85**. The table in choice A represents a data set where the value **90** has a greater frequency than the value **80** and the value **100** has a greater frequency than the value **70**. It follows that this data set has a mean greater than **85**. Therefore, of the given choices, choice A represents the data set with the greatest mean.

Choice B 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: Hard

Question ID 733b819d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 733b819d

Value	Data set A frequency	Data set B frequency
30	2	9
34	4	7
38	5	5
42	7	4
46	9	2

Data set A and data set B each consist of **27** values. The table shows the frequencies of the values for each data set. Which of the following statements best compares the means of the two data sets?

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

ID: 733b819d Answer

Correct Answer: A

Rationale

Choice A is correct. The mean value of a data set is the sum of the values of the data set divided by the number of values in the data set. When a data set is represented in a frequency table, the sum of the values in the data set is the sum of the products of each value and its frequency. For data set A, the sum of products of each value and its frequency is **30(2) + 34(4) + 38(5) + 42(7) + 46(9)**, or **1,094**. It's given that there are **27** values in data set A. Therefore, the mean of data set A is  $\frac{1,094}{27}$ , or approximately **40.52**. Similarly, the mean of data B is  $\frac{958}{27}$ , or approximately **35.48**. Therefore, the mean of data set A is greater than the mean of data set B.

Choice B 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 ID e03f95ad

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: e03f95ad

Data set A consists of the heights of **75** objects and has a mean of **25** meters. Data set B consists of the heights of **50** objects and has a mean of **65** meters. Data set C consists of the heights of the **125** objects from data sets A and B. What is the mean, in meters, of data set C?

ID: e03f95ad Answer

Correct Answer: 41

Rationale

The correct answer is **41**. The mean of a data set is computed by dividing the sum of the values in the data set by the number of values in the data set. It's given that data set A consists of the heights of **75** objects and has a mean of **25** meters. This can be represented by the equation  $\frac{x}{75} = 25$ , where  $x$  represents the sum of the heights of the objects, in meters, in data set A. Multiplying both sides of this equation by **75** yields  $x = 75(25)$ , or  $x = 1,875$  meters. Therefore, the sum of the heights of the objects in data set A is **1,875** meters. It's also given that data set B consists of the heights of **50** objects and has a mean of **65** meters. This can be represented by the equation  $\frac{y}{50} = 65$ , where  $y$  represents the sum of the heights of the objects, in meters, in data set B. Multiplying both sides of this equation by **50** yields  $y = 50(65)$ , or  $y = 3,250$  meters. Therefore, the sum of the heights of the objects in data set B is **3,250** meters. Since it's given that data set C consists of the heights of the **125** objects from data sets A and B, it follows that the mean of data set C is the sum of the heights of the objects, in meters, in data sets A and B divided by the number of objects represented in data sets A and B, or  $\frac{1,875+3,250}{125}$ , which is equivalent to **41** meters. Therefore, the mean, in meters, of data set C is **41**.

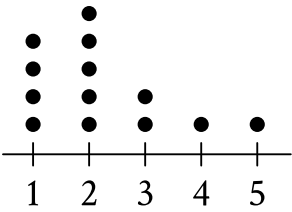
Question Difficulty: Hard



Question ID e5175dad

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: e5175dad



Number of bursts

The dot plot represents a data set of the number of bursts for **13** eruptions of a steam vent. If an additional eruption with **11** bursts is added to this data set to create a new data set of **14** eruptions, which of the following measures will be greater for the new data set than for the original data set?

- I. The median number of bursts
  - II. The mean number of bursts
- A. I and II
- B. I only
- C. II only
- D. Neither I nor II

ID: e5175dad Answer

Correct Answer: C

Rationale

Choice C is correct. It's given that the dot plot represents a data set of the number of bursts for **13** eruptions of a steam vent. The median of a data set with an odd number of elements is the middle element when the elements are in numerical order. For **13** elements in numerical order, this is the **7th** element. For this data set, the first **4** elements have a value of **1**, and the next **5** elements have a value of **2**. Thus, the **7th** element in the ordered data set is **2** and the median number of bursts for the original data set is **2**. If an additional eruption with **11** bursts is added to this data set to create a new data set of **14** eruptions, the median of the new data set will be between the **7th** and **8th** elements in the ordered set, which will also be **2**. Therefore, the median number of bursts for the new data set will be the same as the median number of bursts for the original data set. The mean number of bursts for the original data set is found by adding the values of all **13** elements and dividing that sum by the number of elements, **13**. Since the data is shown in a dot plot, the sum of the values of the elements can be found by multiplying each element's value by its frequency:  $1(4) + 2(5) + 3(2) + 4(1) + 5(1)$ , or **29**. Therefore, the mean number of bursts for the original data set is  $\frac{29}{13}$ . If an additional eruption with **11** bursts is added to this data set to

create a new data set of **14** bursts, the mean number of bursts for the new data set is  $\frac{29+11}{14}$ , or  $\frac{40}{14}$ . Since  $\frac{40}{14} > \frac{29}{13}$ , the mean number of bursts for the new data set is greater than the mean number of bursts for the original data set. Therefore, of the median number of bursts and the mean number of bursts, only the mean number of bursts is greater for the new data set than for the original data set.

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

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

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

Question Difficulty: Hard

# Question ID d0bebb2c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: d0bebb2c

Data set A consists of the heights of **75** buildings and has a mean of **32** meters. Data set B consists of the heights of **50** buildings and has a mean of **62** meters. Data set C consists of the heights of the **125** buildings from data sets A and B. What is the mean, in meters, of data set C?

ID: d0bebb2c Answer

Correct Answer: 44

Rationale

The correct answer is **44**. The mean of a data set is computed by dividing the sum of the values in the data set by the number of values in the data set. It's given that data set A consists of the heights of **75** buildings and has a mean of **32** meters. This can be represented by the equation  $\frac{x}{75} = 32$ , where  $x$  represents the sum of the heights of the buildings, in meters, in data set A. Multiplying both sides of this equation by **75** yields  $x = 75(32)$ , or  $x = 2,400$  meters. Therefore, the sum of the heights of the buildings in data set A is **2,400** meters. It's also given that data set B consists of the heights of **50** buildings and has a mean of **62** meters. This can be represented by the equation  $\frac{y}{50} = 62$ , where  $y$  represents the sum of the heights of the buildings, in meters, in data set B. Multiplying both sides of this equation by **50** yields  $y = 50(62)$ , or  $y = 3,100$  meters. Therefore, the sum of the heights of the buildings in data set B is **3,100** meters. Since it's given that data set C consists of the heights of the **125** buildings from data sets A and B, it follows that the mean of data set C is the sum of the heights of the buildings, in meters, in data sets A and B divided by the number of buildings represented in data sets A and B, or  $\frac{2,400+3,100}{125}$ , which is equivalent to **44** meters. Therefore, the mean, in meters, of data set C is **44**.

Question Difficulty: Hard

Question ID ff37e18d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: ff37e18d

Weight (pounds)	Frequency
13	12
14	8
15	5
16	7
17	9
18	10
19	13
20	7

The frequency table summarizes a data set of the weights, rounded to the nearest pound, of **71** tortoises. A weight of **39** pounds is added to the original data set, creating a new data set of the weights, rounded to the nearest pound, of **72** tortoises. Which statement best compares the mean and median of the new data set to the mean and median of the original data set?

- A. The mean of the new data set is greater than the mean of the original data set, and the median of the new data set is greater than the median of the original data set.
- B. The mean of the new data set is greater than the mean of the original data set, and the medians of the two data sets are equal.
- C. The mean of the new data set is less than the mean of the original data set, and the median of the new data set is less than the median of the original data set.
- D. The mean of the new data set is less than the mean of the original data set, and the medians of the two data sets are equal.

ID: ff37e18d 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. The new data set consists of the weights of the **71** tortoises in the original data set and one additional weight, **39**. Since the additional weight, **39**, is greater than any of the values in the original data set, the mean of the new data set is greater than the mean of the original data set. 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 original data set consists of the weights of **71** tortoises and is in ascending order, the median of the original data set is represented by the middle value, or the **36th** value. Based on the frequencies shown in the table, the **36th** value in this data set is **17**. 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 the new data set consists of the weights of **72** tortoises, the median of the new data set is between the **36th** and **37th** data values when the values are arranged in ascending order. To keep the data in ascending order, the additional value of **39** would be placed at the bottom of the frequency table with a frequency of **1**. Therefore, based on the frequencies in the table, the **36th** and **37th** values in the new data set are both **17**. It follows that the median of the new data set is **17**, which is the same as the median of the original data set. Therefore, the mean of the new data set is greater than the mean of the original data set, and the medians of the two data sets are equal.

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: Hard

# Question ID 5f6315e1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 5f6315e1

Data set A consists of **10** positive integers less than **60**. The list shown gives **9** of the integers from data set A.

**43, 45, 44, 43, 38, 39, 40, 46, 40**

The mean of these **9** integers is **42**. If the mean of data set A is an integer that is greater than **42**, what is the value of the largest integer from data set A?

ID: 5f6315e1 Answer

Correct Answer: 52

Rationale

The correct answer is **52**. The mean of a data set is calculated by dividing the sum of the data values by the number of values. It's given that data set A consists of **10** values, **9** of which are shown. Let  $x$  represent the **10th** data value in data set A, which isn't shown. The mean of data set A can be found using the expression  $\frac{43+45+44+43+38+39+40+46+40+x}{10}$ , or  $\frac{378+x}{10}$ . It's given that the mean of the **9** values shown is **42** and that the mean of all **10** numbers is greater than **42**. Consequently, the **10th** data value,  $x$ , is larger than **42**. It's also given that the data values in data set A are positive integers less than **60**. Thus,  $42 < x < 60$ . Finally, it's given that the mean of data set A is an integer. This means that the sum of the **10** data values,  $378 + x$ , is divisible by **10**. Thus,  $378 + x$  must have a ones digit of **0**. It follows that  $x$  must have a ones digit of **2**. Since  $42 < x < 60$  and  $x$  has a ones digit of **2**, the only possible value of  $x$  is **52**. Since **52** is larger than any of the integers shown, the largest integer from data set A is **52**.

Question Difficulty: Hard