Question ID 3a05154a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 3a05154a

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.

Question ID 41fd4b9f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 41fd4b9f

The table shows the frequency of values in a data set.

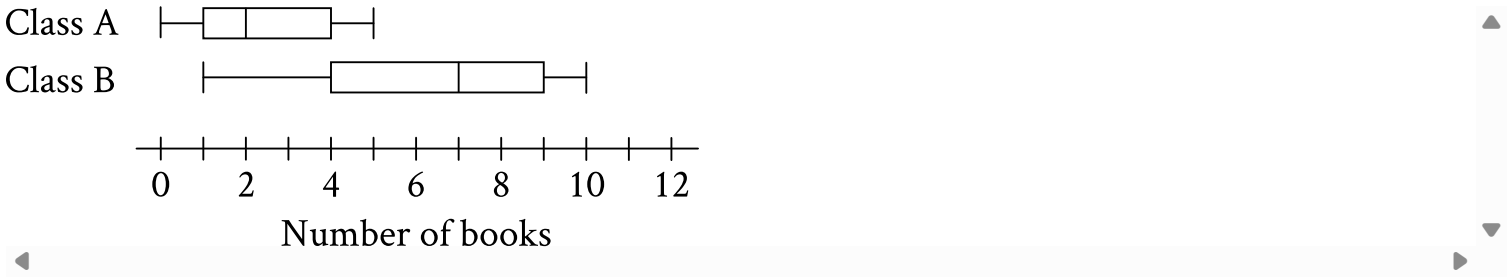
Value	Frequency
19	7
21	1
23	7
25	4

What is the minimum value of the data set?

Question ID c59942a1

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: c59942a1



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?

Question ID 2731baec

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 2731baec

The list gives the mass, in grams, of 5 alpine marmots.

$4{,}010;\ 4{,}010;\ 3{,}030;\ 4{,}050;\ 3{,}050$

What is the mean mass, in grams, of these 5 alpine marmots?

Question ID 4be5f7b1

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 4be5f7b1

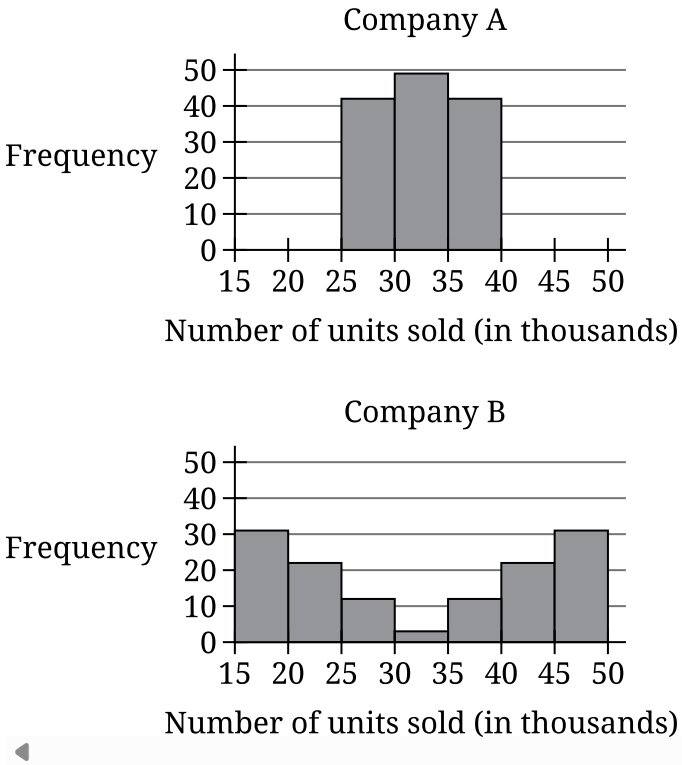
$23, 27, 27, 32, 35, 36, 52$

What is the range of the 7 scores shown?

Question ID 59dac82a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 59dac82a



The histograms summarize the distributions of number of units sold, in thousands, for company A and company B. Which statement best compares the standard deviations of number of units sold for these companies?

A. The standard deviation of number of units sold for company A is less than the standard deviation of number of units sold for company B.

B. The standard deviation of number of units sold for company A is greater than the standard deviation of number of units sold for company B.

C. The standard deviation of number of units sold for company A is equal to the standard deviation of number of units sold for company B.

D. There is not enough information to compare the standard deviations.

Question ID df13ee3e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: df13ee3e

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

Question ID ce27ef4f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: ce27ef4f

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?

Question ID 21da05e5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 21da05e5

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.

Question ID 52161aeb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 52161aeb

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

Question ID 7b61ae2a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 7b61ae2a

$4, 10, 18, 4, 4, 5, 6, 5$

What is the median of the data set shown?

A. 4

B. 5

C. 7

D. 14

Question ID 9265f4de

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 9265f4de

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.

Question ID e96c77a6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: e96c77a6

Data value	Frequency
6	3
7	3
8	8
9	8
10	9
11	11
12	9
13	0
14	6

The frequency table summarizes the 57 data values in a data set. What is the maximum data value in the data set?

Question ID 553eb498

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 553eb498

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

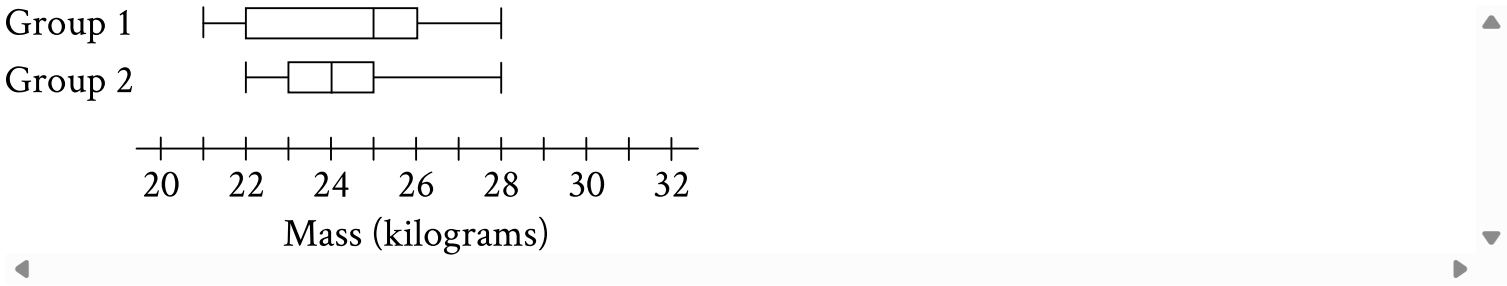
C. II only

D. Neither I nor II

Question ID a0db586b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: a0db586b



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.

Question ID 7ecea565

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 7ecea565

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

Question ID 081070c7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 081070c7

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?

Question ID f0af2609

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: f0af2609

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?

Question ID a4acdfcb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: a4acdfcb

Data set A has 15 values and is represented by the dot plot shown. Data set B is created by adding 46 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 greater than 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 greater than the median of data set A, and the range of data set B is greater than the range of data set A.

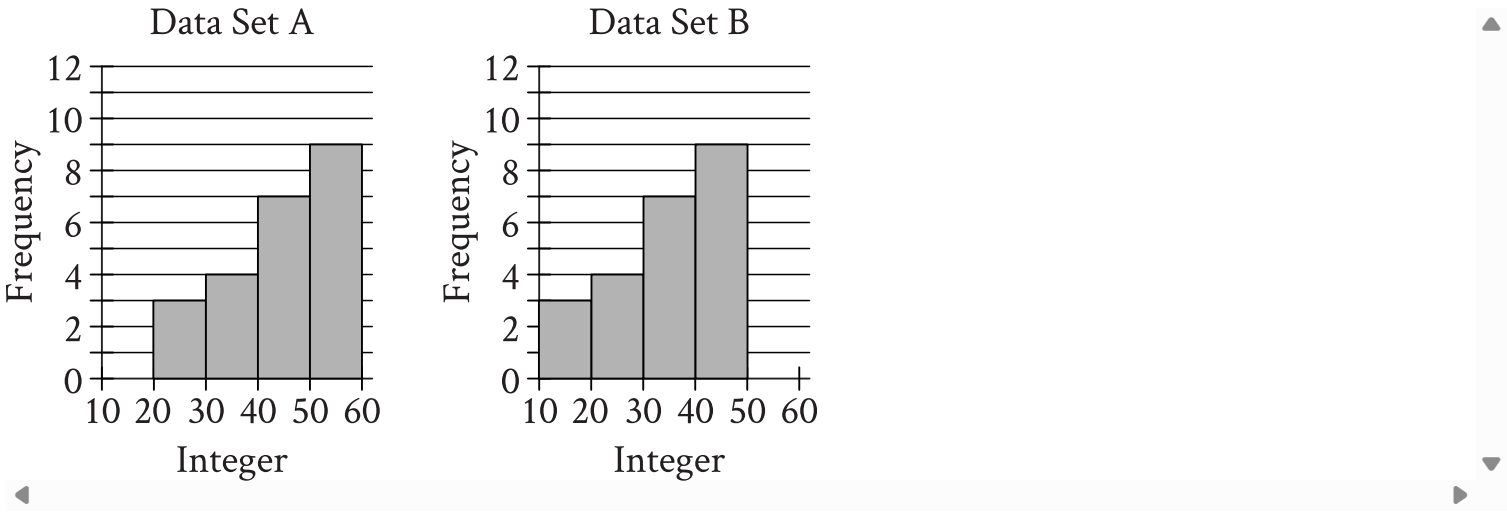
C. The median of data set B is equal to the median of data set A, and the range of data set B is greater than the range of data set A.

D. 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.

Question ID 3248a2ce

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Problem-Solving and Data Analysis	One-variable data: Distributions and measures of center and spread	Hard

ID: 3248a2ce



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