

One-Variable Data

CollegeBoard Question Bank

Abstract

This exercise sheet contains

- an **Easy** category with 12 questions;
- a **Medium** category with 11 questions;
- a **Hard** category with 9 questions

for you to attempt. A digital copy of this sheet is available for you on [moodle](#). Feel free to utilize [the Question Space on Teams](#) to ask for guidance.

Best,
Omar :)

One-Variable Data

Easy

(1) **8736334b** MULTIPLE CHOICE One answer only

Data set A: 72, 73, 73, 76, 76

Data set B: 61, 64, 74, 85, x

Data set A and data set B each contain 5 numbers. If the mean of data set A is equal to the mean of data set B , what is the value of x ?

- a. 86
- b. 85
- c. 95
- d. 77

(2) f890dc20

MULTIPLE CHOICE

One answer only

2, 2, 2, 3, 4, 4, 11

What is the median of the seven data values shown?

- a. 4
- b. 2
- c. 9
- d. 3

(3) **c88e0663**

MULTIPLE CHOICE

One answer only

For a school fund-raiser, 10 students sold a total of 90 boxes of cookies.
Which of the following can be calculated from this information?

- a. The greatest number of boxes sold by one student
- b. The average number of boxes sold per student
- c. The median number of boxes sold per student
- d. The least number of boxes sold by one student

(4) **fa7a0164** MULTIPLE CHOICE One answer only

The table below shows the high and low temperatures in Houston, Texas, during a five-day period.

Temperatures in Houston, Texas (degrees Fahrenheit)

	Monday	Tuesday	Wednesday	Thursday	Friday
High temperature	73	56	62	75	81
Low temperature	49	37	41	54	63

What was the mean low temperature, in degrees Fahrenheit, during the five-day period?

- a. 59
- b. 59.1
- c. 48.8
- d. 49

(5) 708590d7

MULTIPLE CHOICE

One answer only

Data set A: 1, 2, 3, 4, 5, 6, 7 Data set B: 1, 1, 2, 2, 3, 3, 4

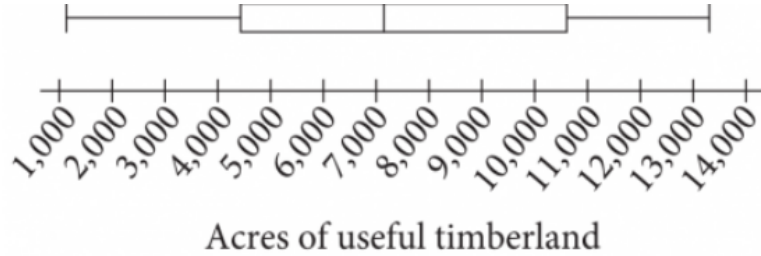
Which of the following statements correctly compares the means of data set A and data set B ?

- a. The mean of data set A is less than the mean of data set B .
- b. The mean of each data set is 2 .
- c. The mean of each data set is 4 .
- d. The mean of data set A is greater than the mean of data set B .

(6) 374b18f9

MULTIPLE CHOICE

One answer only



The number of acres of useful timberland in 13 counties in California is summarized in the box plot above. Which of the following is closest to the median number of acres?

- a. 10,595
- b. 8,831
- c. 4,399
- d. 7,067

(7) **c54b92a2** MULTIPLE CHOICE One answer only

A study was conducted on the production rates for a company that produces tractor wheels. The table below shows the number of wheels made during 11 consecutive one-hour production periods.

One-hour period	Number of wheels made
A	24
B	24
C	21
D	21
E	21
F	19
G	24
H	24
I	19
J	22
K	23

What is the range of the number of wheels made for the 11 one-hour periods?

- a. 4.0
- b. 4.5
- c. 5.0
- d. 5.5

(8) 4bb25495 MULTIPLE CHOICE One answer only

Five Smallest Countries in 2016

Country	Land area (square kilometers)
Monaco	2.0
Nauru	21
San Marino	61
Tuvalu	26
Vatican City	0.44

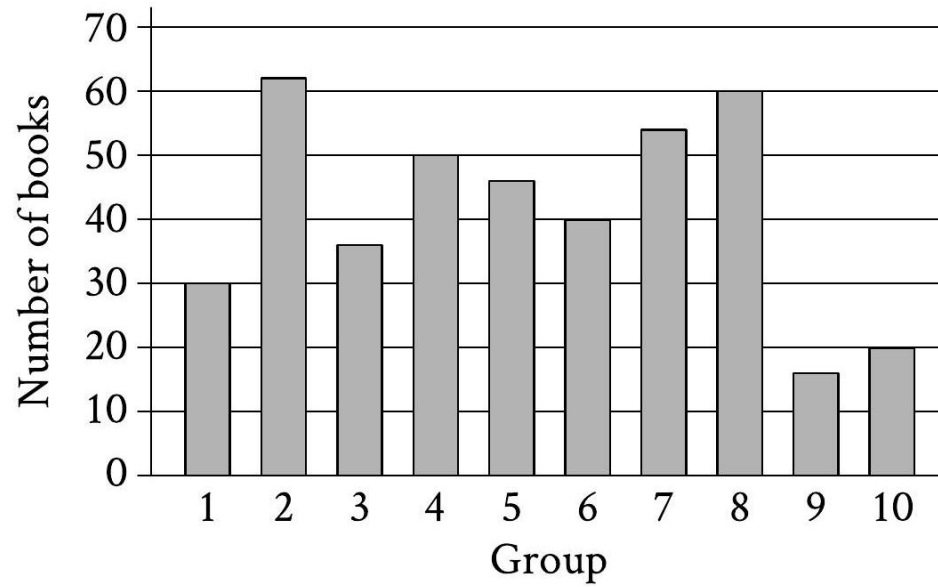
The table above shows the land area, in square kilometers, of the five smallest countries of the world in 2016. Based on the table, what is the mean land area of the 5 smallest countries in 2016, to the nearest square kilometer?

- a. 22
- b. 61
- c. 20
- d. 110

(9) 79340403

SHORT ANSWER

Case-Insensitive

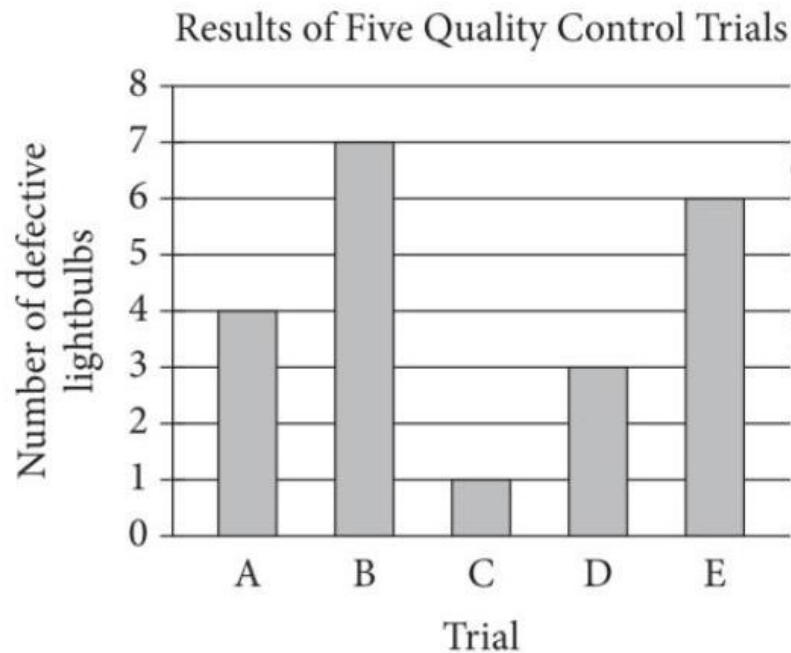


The bar graph shows the distribution of 414 books collected by 10 different groups for a book drive. How many books were collected by group 1 ?

(10) a9647302

MULTIPLE CHOICE

One answer only



For quality control, a company that manufactures lightbulbs conducted five different trials. In each trial, 500 different lightbulbs were tested. The bar graph above shows the number of defective lightbulbs found in each trial. What is the mean number of defective lightbulbs for the five trials?

- a. 5.0
- b. 4.6
- c. 4.0
- d. 4.2

(11) 6670e407

MULTIPLE CHOICE

One answer only

Number of High School Students Who Completed Summer Internships

High school	2008	2009	2010	2011	2012
Foothill	87	80	75	76	70
Valley	44	54	65	76	82
Total	131	134	140	152	152

The table above shows the number of students from two different high schools who completed summer internships in each of five years. No student attended both schools. Which of the following statements are true about the number of students who completed summer internships for the 5 years shown?

- I) The mean number from Foothill High School is greater than the mean number from Valley High School.
- II) The median number from Foothill High School is greater than the median number from Valley High School.

- a. I only
- b. Neither I nor II
- c. I and II
- d. II only

(12) **869a32f1** MULTIPLE CHOICE One answer only

The high temperature, in degrees Fahrenheit (°F), in a certain city was recorded for each of 5 days. The data are shown below.

Day	1	2	3	4	5
High temperature (°F)	81	80	81	81	82

Over this 5 -day period, which of the following is NOT equal to 81°F ?

- a. Median of the high temperatures
- b. Mode of the high temperatures
- c. Mean of the high temperatures
- d. Range of the high temperatures

Medium

(1) **4c774b00** MULTIPLE CHOICE One answer only

Ages of 20 Students Enrolled in a College Class

Age	Frequency
18	6
19	5
20	4
21	2
22	1
23	1
30	1

The table above shows the distribution of ages of the 20 students enrolled in a college class. Which of the following gives the correct order of the mean, median, and mode of the ages?

- a. mode < mean < median
- b. mode < median < mean
- c. median < mode < mean
- d. mean < mode < median

(2) 3f2ee20a MULTIPLE CHOICE One answer only

The results of two independent surveys are shown in the table below.

Men's Height

Group	Sample size	Mean (centimeters)	Standard deviation (centimeters)
A	2,500	186	12.5
B	2,500	186	19.1

Which statement is true based on the table?

- a. The median height of Group-B is larger than the median height of Group-A.
- b. The Group-A data set was identical to the Group-B data set.
- c. Group-B contained the tallest participant.
- d. The heights of the men in Group-B had a larger spread than the heights of the men in Group-A.

(3) **d0efc1dd**

MULTIPLE CHOICE

One answer only

$15, 14, 18, 17, x$

The mean and the median of the five numbers above are equal. Which of the following is NOT a possible value of x ?

- a. 11
- b. 16
- c. 21
- d. 6

- (4) 07f2829b SHORT ANSWER Case-Insensitive

International Tourist Arrivals, in millions

Country	2012	2013
France	83.0	84.7
United States	66.7	69.8
Spain	57.5	60.7
China	57.7	55.7
Italy	46.4	47.7
Turkey	35.7	37.8
Germany	30.4	31.5
United Kingdom	26.3	32.2
Russia	24.7	28.4

The table above shows the number of international tourist arrivals, rounded to the nearest tenth of a million, to the top nine tourist destinations in both 2012 and 2013. Based on the information given in the table, how much greater, in millions, was the median number of international tourist arrivals to the top nine tourist destinations in 2013 than the median number in 2012, to the nearest tenth of a million?

(5) **7b65bb28**

MULTIPLE CHOICE

One answer only

Station 1	Station 2	Station 3	Station 4	Station 5
\$3.699	\$3.609	\$3.729	\$3.679	\$3.729

In the table above, Melissa recorded the price of one gallon of regular gas from five different local gas stations on the same day. What is the median of the gas prices Melissa recorded?

- a. \$3.679
- b. \$3.729
- c. \$3.689
- d. \$3.699

(6) **be00d896** MULTIPLE CHOICE One answer only

For which of the following data sets is the mean greater than the median?

- a. 0, 10, 20, 30, 40, 50, 60, 70, 80
- b. 5, 5, 5, 5, 5, 5, 5, 5, 5
- c. 7, 107, 107, 207, 207, 207, 307, 307, 307
- d. 2, 4, 8, 16, 32, 64, 128, 256, 512

(7) **5c3c2e3c** MULTIPLE CHOICE One answer only

The weights, in pounds, for 15 horses in a stable were reported, and the mean, median, range, and standard deviation for the data were found. The horse with the lowest reported weight was found to actually weigh 10 pounds less than its reported weight. What value remains unchanged if the four values are reported using the corrected weight?

- a. Standard deviation
- b. Median
- c. Range
- d. Mean

(8) **9110c120**

MULTIPLE CHOICE

One answer only

Data set A: 5, 5, 5, 5, 5, 5, 5, 5, 5
Data set B: 5, 5, 5, 5, 5, 5, 5, 5, 5, 100

Which of the following statements about the means and medians of data set A and data set B is true?

- a. Neither the means nor the medians are different.
- b. Only the means are different.
- c. Both the means and the medians are different.
- d. Only the medians are different.

(9) 881ef5f5 SHORT ANSWER Case-Insensitive

If a is the mean and b is the median of nine consecutive integers, what is the value of $|a - b|$?

- (10) **9e2bf782** MULTIPLE CHOICE One answer only

A fish hatchery has three tanks for holding fish before they are introduced into the wild. Ten fish weighing less than 5 ounces are placed in tank-A. Eleven fish weighing at least 5 ounces but no more than 13 ounces are placed in tank C. Which of the following could be the median of the weights, in ounces, of these 33 fish?

- a. 8
- b. 13.5
- c. 4.5
- d. 15

(11) **8193e8cd** SHORT ANSWER Case-Insensitive

2, 10, 3, 7, 6

The mean of the list of numbers above is what fraction of the sum of the five numbers?

Hard

- (1) **457d2f2c** MULTIPLE CHOICE One answer only

A data set of 27 different numbers has a mean of 33 and a median of 33. A new data set is created by adding 7 to each number in the original data set that is greater than the median and subtracting 7 from each number in the original data set that is less than the median. Which of the following measures does NOT have the same value in both the original and new data sets?

- a. Mean
- b. Sum of the numbers
- c. Standard deviation
- d. Median

(2) 1142af44

MULTIPLE CHOICE

One answer only

Value	Frequency
1	a
2	$2a$
3	$3a$
4	$2a$
5	a

The frequency distribution above summarizes a set of data, where a is a positive integer. How much greater is the mean of the set of data than the median?

- a. 0
- b. 2
- c. 1
- d. 3

(3) **651d83bb** MULTIPLE CHOICE One answer only

Two different teams consisting of 10 members each ran in a race. Each member's completion time of the race was recorded. The mean of the completion times for each team was calculated and is shown below.

Team A: 3.41 minutes

Team B: 3.79 minutes

Which of the following **MUST** be true?

I) Every member of team A completed the race in less time than any member of team B .

II) The median time it took the members of team B to complete the race is greater than the median time it took the members of team A to complete the race.

III) There is at least one member of team B who took more time to complete the race than some member of team A .

- a. II and III only
- b. I and III only
- c. III only
- d. II, I, and III

(4) **1e8ccffd** MULTIPLE CHOICE One answer only

The mean score of 8 players in a basketball game was 14.5 points. If the highest individual score is removed, the mean score of the remaining 7 players becomes 12 points. What was the highest score?

- a. 36
- b. 32
- c. 24
- d. 20

- (5) **4ff597db** MULTIPLE CHOICE One answer only

The mean amount of time that the 20 employees of a construction company have worked for the company is 6.7 years. After one of the employees leaves the company, the mean amount of time that the remaining employees have worked for the company is reduced to 6.25 years. How many years did the employee who left the company work for the company?

- a. 0.45
- b. 2.30
- c. 9.00
- d. 15.25

(6) **98958ae8** SHORT ANSWER Case-Insensitive

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 ?

(7) 9d935bd8 MULTIPLE CHOICE One answer only

Percent of Residents Who Earned a Bachelor's Degree or Higher

State	Percent of residents
State A	21.9%
State B	27.9%
State C	25.9%
State D	19.5%
State E	30.1%
State F	36.4%
State G	35.5%

A survey was given to residents of all 50 states asking if they had earned a bachelor's degree or higher. The results from 7 of the states are given in the table above. The median percent of residents who earned a bachelor's degree or higher for all 50 states was 26.95%. What is the difference between the median percent of residents who earned a bachelor's degree or higher for these 7 states and the median for all 50 states?

- a. 0.95%
- b. 1.22%
- c. 7.45%
- d. 0.05%

(8) 54d93874 SHORT ANSWER Case-Insensitive

	Masses (kilograms)					
Andrew	2.4	2.5	3.6	3.1	2.5	2.7
Maria	x	3.1	2.7	2.9	3.3	2.8

Andrew and Maria each collected six rocks, and the masses of the rocks are shown in the table above. The mean of the masses of the rocks Maria collected is 0.1 kilogram greater than the mean of the masses of the rocks Andrew collected. What is the value of x ?

(9) **94237701** SHORT ANSWER Case-Insensitive

For a certain computer game, individuals receive an integer score that ranges from 2 through 10 . The table below shows the frequency distribution of the scores of the 9 players in group A and the 11 players in group B .

Score	Group A	Group B
2	1	0
3	1	0
4	2	0
5	1	4
6	3	2
7	0	0
8	0	2
9	1	1
10	0	2
Total	9	11

The median of the scores for group B is how much greater than the median of the scores for group A?

Total of marks: 32