Applications of Measures of Central Tendency

1.) A set of nine data points is shown below.

8, 11, 12, 10, 9, 7, 5, 3, 9

Which statement is true if a tenth data point of 45 is added to the data set?

A. The mean and median will both increase.

B. The mean will increase and the median will decrease.

C. The mean will increase and the median will remain the same.

D. The mean and median will both decrease.

Without 45	With 45
Mean: 8.22	Mean: 11.9
Median: 9	Median: 9

2.)The data below shows the rowing times for members of a local boat-racing club.

Men	Women
7 m 20 s	7 m 46 s
7 m 25 s	7 m 47 s
7 m 26 s	7 m 39 s
7 m 28 s	7 m 49 s
7 m 28 s	7 m 49 s
7 m 27 s	7 m 50 s
7 m 24 s	7 m 51 s
7 m 26 s	7 m 57 s
7 m 19 s	7 m 49 s

440 445 446 448 448 447 444 446 439

459

Convert the times to seconds
Ex. - 7 m 20 seconds =
7(60) + 20 = 440 seconds!

What is the approximate difference between the men's **mean** rowing time and the women's **fastest** rowing time?

444.8

459

A. 12 seconds

B. 14 seconds

C. 20 seconds

D. 23 seconds

3.) The data below shows the number of hours boys and girls spent studying for a test.

Boys: {2, 1, 3, 1, 2, 2,}
Girls: {4, 1, 3, 2, 2, 4}

Girls IQR: 4 − 2 = 2

Boys: IQR: 2 − 1 = 1

Q3 − Q1

What is the difference in the interquartile range between the girls and boys?

A. 1

B. 2

C. 3

D. 5

4.) The table below shows the scores of two classes on a science project.

What is the difference between the two classes' mean scores?

Class A	Class B
78	65
65	78
90	80
77	76
88	70
80	65
94	81
89	78
75	73
80	80

A. 3

B. 4

C. 7

D. 13

Class A Mean: 81.6

Class B: Mean: 74.6

5.) What is the ***approximate*** difference between the medians of the two sets of data shown below?

Set 1: {2.99, 1.89, 3.99, 7.43}
Set 2: {2.99, 6.32, 2.87, 3.28}

A. 0.21

C. 0.73

D. 0.94

6.) The data sets show the test scores of a group for the last two tests.

Test 1: {75, 75, 85, 80, 65, 70, 65}

Test 2: {95, 85, 85, 90, 90, 95, 100}

Which data set had the smaller standard deviation?

A. Test 1 with a standard deviation of 6.92.

B. Test 2 with a standard deviation of 6.92.

C. Test 1 with a standard deviation of 5.15.

D. Test 2 with a standard deviation of 5.15.

7.)The data shows the test scores for two different instructors.

Ms. Johnson's Class	Ms. Brown's Class
60, 60, 80, 84, 75, 70, 93, 60, 60	90, 85, 55, 60, 85, 70, 90 60, 85, 92, 79, 73, 65

Which statement is true?

A. Ms. Brown's class had a smaller mean than Ms. Johnson's class.

B. Ms. Brown's class had a larger mean than Ms. Johnson's class.

C. Ms. Brown's class and Ms. Johnson's class had the same mean.

D. Ms. Brown's class had a smaller median than Ms. Johnson's class

8.) If the weight of the polar bear is removed, which statement is true?

Type of Bear	Weight (pounds)
Asiatic Black Bear	225
Black Bear	300
Brown Bear	550
Panda Bear	200
Polar Bear	1,000
Sloth Bear	300
Spectacled Bear	280
Sun Bear	100

A. The mean decreases more than the median because the polar bear is a high outlier.

B. The mean decreases less than the median because the polar bear is a high outlier.

C. The mean decreases more than the median because the high value balances the low value.

D. The mean decreases less than the median because the high value balances the low value.

w/ Polar Bear
Mean: 369.375
Median: 290

W/o Polar Bear
Mean: 279.29
Median: 280