

A.S.4: Central Tendency: Compare and contrast the appropriateness of different measures of central tendency for a given data set

- 1 Which statement is true about the data set 3, 4, 5, 6, 7, 7, 10?
 - 1) mean = mode
 - 2) mean > mode
 - 3) mean = median
 - 4) mean < median
- 2 Which statement is true about the data set 4, 5, 6, 6, 7, 9, 12?
 - 1) mean = mode
 - 2) mode = median
 - 3) mean < median
 - 4) mode > mean
- 3 Alex earned scores of 60, 74, 82, 87, 87, and 94 on his first six algebra tests. What is the relationship between the measures of central tendency of these scores?
 - 1) median < mode < mean
 - 2) mean < mode < median
 - 3) mode < median < mean
 - 4) mean < median < mode
- 4 From January 3 to January 7, Buffalo recorded the following daily high temperatures: 5°, 7°, 6°, 5°, and 7°. Which statement about the temperatures is true?
 - 1) mean = median
 - 2) mean = mode
 - 3) median = mode
 - 4) mean < median
- 5 The ages of five children in a family are 3, 3, 5, 8, and 18. Which statement is true for this group of data?
 - 1) mode > mean
 - 2) mean > median
 - 3) median = mode
 - 4) median > mean
- 6 The weights of all the students in grade 9 are arranged from least to greatest. Which statistical measure separates the top half of this set of data from the bottom half?
 - 1) mean
 - 2) mode
 - 3) median
 - 4) average
- 7 Melissa's test scores are 75, 83, and 75. Which statement is true about this set of data?
 - 1) mean < mode
 - 2) mode < median
 - 3) mode = median
 - 4) mean = median
- 8 Sam's grades on eleven chemistry tests were 90, 85, 76, 63, 94, 89, 81, 76, 78, 69, and 97. Which statement is true about the measures of central tendency?
 - 1) mean > mode
 - 2) mean < median
 - 3) mode > median
 - 4) median = mean
- 9 Kelsey scored the following points in her first six basketball games: 22, 14, 19, 22, 8, and 17. What is the relationship between the measures of central tendency of these data?
 - 1) mode > median > mean
 - 2) median > mode > mean
 - 3) mean > median > mode
 - 4) mode > mean > median
- 10 The test scores for five students were 59, 60, 63, 76, and 87. How many points greater than the median is the mean?

- 11 Mrs. Porter recorded her students' grades in the frequency table below.

Score	Frequency
96	2
92	5
88	3
84	2
78	4
60	1

Which statement is true for the data?

- 1) mean > median > mode
 - 2) mean > mode > median
 - 3) mode > median > mean
 - 4) median > mean > mode
- 12 The values of 11 houses on Washington St. are shown in the table below.

Value per House	Number of Houses
\$100,000	1
\$175,000	5
\$200,000	4
\$700,000	1

Find the mean value of these houses in dollars.
Find the median value of these houses in dollars.
State which measure of central tendency, the mean or the median, *best* represents the values of these 11 houses. Justify your answer.

- 13 The prices of seven race cars sold last week are listed in the table below.

Price per Race Car	Number of Race Cars
\$126,000	1
\$140,000	2
\$180,000	1
\$400,000	2
\$819,000	1

What is the mean value of these race cars, in dollars? What is the median value of these race cars, in dollars? State which of these measures of central tendency best represents the value of the seven race cars. Justify your answer.

- 14 Two social studies classes took the same current events examination that was scored on the basis of 100 points. Mr. Wong's class had a median score of 78 and a range of 4 points, while Ms. Rizzo's class had a median score of 78 and a range of 22 points. Explain how these classes could have the same median score while having very different ranges.

A.S.4: Central Tendency: Compare and contrast the appropriateness of different measures of central tendency for a given data set

Answer Section

1 ANS: 3

mean = 6, median = 6 and mode = 7

REF: 080804ia

2 ANS: 2

mean = 7, median = 6 and mode = 6

REF: 011329ia

3 ANS: 4

The mean is $80.\bar{6}$, the median is 84.5 and the mode is 87.

REF: 010907ia

4 ANS: 1

mean = 6, median = 6 and mode = 5, 7.

REF: 010118a

5 ANS: 2

mean = 7.4, median = 5 and mode = 3

REF: 010315a

6 ANS: 3

REF: 080501a

7 ANS: 3

mean = 77.7, median = 75 and mode = 75

REF: 010618a

8 ANS: 1

mean = $81\frac{7}{11}$, median = 81 and mode = 76

REF: 011118ia

9 ANS: 1

The mean is 17, the median is 18 and the mode is 22.

REF: 081421ia

10 ANS:

6

REF: 089005siii

11 ANS: 3

The mean is 86, the median is 88 and the mode is 92.

REF: 061525ia

- 12 ANS:
225000, 175000, the median better represents the value since it is closer to more values than the mean.

REF: fall0737ia

- 13 ANS:
315,000, 180,000, the median better represents value since it is closer to more prices than the mean.

REF: 060839ia

- 14 ANS:
One very high or very low score in either class would have a great effect on the range for that class, but might not affect the median at all. The range is the difference between the two most extreme values, the lowest and the highest. The median, being the middle value, is not very sensitive to outliers or to extreme values.

REF: 010321b