

- 1) The mean takes every score of a data set into account. The median only takes into account the middle score of a ranked odd-numbered data set or the two middle scores of a ranked even-numbered data set. The mean is sensitive to extremes and can be drawn to very low or very high values, but the median is not affected by extremes. Since it uses all the values of a data set, the mean is the preferred average, unless there are extreme values. In the latter case, the median is preferred. An example of the latter is the comparison of salaries of occupations.
- 2) The sets would have different sizes and standard deviations. Examples will vary. A general method for constructing examples is as follows: (1) compose several values and find the sum, (2) prepare another data set with, say, twice that sum and twice that size. Examples are Set A: 5, 10, 15, 2, 5, 8; Set B: 9, 10, 11, 3, 5, 7, 19, 1, 2, 5, 6, 12. Notice that Set A and Set B both have means = 7.5 and modes of 5. Yet, the n for A is 6, while the n for B is 12. Also, the s for A is 4.6, while the s for B is 5.1.
- 3) Set C would have the largest standard deviation, since its values as a group are farther from 30 than in Sets A and B. Set A has the smallest standard deviation, namely 0, since all values are the same, and thereby equal the mean.
- 4) D
- 5) A
- 6) B
- 7) A
- 8) D
- 9) C
- 10) D
- 11) C
- 12) A
- 13) B
- 14) C
- 15) D
- 16) D
- 17) B
- 18) A
- 19) A
- 20) Men aged 20–29: 5.3%
Men aged 60–69: 10.1 %
There is substantially more variation in blood pressures of the men aged 60–69.
- 21) Restaurant A: 57 sec; 493.98 sec^2 ; 22.23 sec
Restaurant B: 77 sec; 727.98 sec^2 ; 26.98 sec
There is more variation in the times for restaurant B.
- 22) D
- 23) D
- 24) A
- 25) C
- 26) B
- 27) B
- 28) B
- 29) D
- 30) B
- 31) A
- 32) C
- 33) A
- 34) D
- 35) B
- 36) Answers will vary.