

Chapter 2: Means to an End: Computing and Understanding Averages

★ *Note to instructor: Test items marked with this star symbol also appear in the chapter quiz on the book's open-access Student Study Site.*

1. While there are three measures of central tendency, the mean, median, and mode are all interchangeable anyway.
 - A) True
 - *B) False

2. This is the value that best represents an entire group of scores.
 - A) Mean
 - B) Median
 - C) Mode
 - *D) Average

3. Which of the following is not a measure of central tendency?
 - A) Median
 - B) Mode
 - *C) Standard deviation
 - D) Mean

4. This measure of central tendency can be considered the most precise:
 - A) Mode
 - B) Median
 - *C) Mean
 - D) None of the above

5. This measure of central tendency can be considered the least precise:

- A) Median
- *B) Mode
- C) Mean
- D) Other

6. What should be used to determine central tendency?

- A) A correlation
- B) A graph
- C) The standard deviation
- *D) The average

7. This consists of the middle point of a set of values:

- A) Mean
- *B) Median
- C) Mode
- D) Other

8. What is the most common average computed?

- A) Mode
- *B) Mean
- C) Variance
- D) Median

9. What is the symbol used to represent the mean?

- A) N
- B) n
- *C) \bar{x}

D) X

★10. What is another term for the mean?

A) Midpoint

B) Frequency

*C) Arithmetic average

D) Distribution

★11. What value is most often used to represent an entire group of scores?

A) Mode

B) N

C) Median

*D) Mean

★12. If a distribution is "significantly distorted" what is this called?

A) Variability

B) Outliers

*C) Skew

D) Percentile

13. What is another way of describing "measures of central tendency"?

A) Statistical measures

B) Measures of variability

*C) Averages

D) Deviation scores

★14. What is the formula for computing the mean?

- A) $\Sigma X + n$
- B) $\Sigma Y / X$
- *C) $\Sigma X / n$
- D) $\Sigma N + y$

15. This is calculated by multiplying values by the frequency of their occurrence, adding the total of all the products, and then dividing by the total number of occurrences:

- A) Mean
- B) Arithmetic mean
- C) Mode
- *D) Weighted mean

★16. Which of the following symbols represents the individual score?

- *A) X
- B) n
- C) N
- D) Σ

17. What does the Σ symbol represent?

- A) The mean
- *B) The sum of values
- C) The sample size
- D) An individual score

18. What is the name of the letter Σ ?

- A) Phi
- B) Rho

*C) Sigma

D) Alpha

19. Which of the following symbols represents sample size?

A) X

B) y

*C) n

D) M

20. What does the symbol M represent?

A) Population size

B) Sample Size

*C) Mean

D) Individual score

⚡21. If you know $M = 5$ and the sum of scores is 20, what is n?

*A) 4

B) .25

C) 100

D) Need more information

⚡22. If $\Sigma X = 4,390$ and $n = 4$, what is M?

A) 17,560

B) .0100

*C) 1097.5

D) Need more information

23. What is the Mean value for the following scores: 10, 35, 40, 60, 55, 25, 50?
- A) 45
 - B) 44.17
 - C) 40
 - *D) 39.29
24. What is the Mean value of the following scores: 12, 25, 15, 27, 32, 8?
- *A) 19.83
 - B) 21.24
 - C) 20.00
 - D) 19.98
25. What is the Mean value of the following scores: 1.11, 1.17, 1.15, 2.02, 2.07, 3.11, 2.14?
- A) 2.14
 - B) 2.07
 - C) 1.74
 - *D) 1.82
26. What is the Mean value of the following scores: 117, 132, 147, 156, 196?
- A) 151.2
 - *B) 149.6
 - C) 147.0
 - D) 148.7
27. Your current exam mean is 97.2. If you receive a 99 on the next exam, this will have the effect of:
- *A) Increasing your mean

- B) Decreasing your mean
 - C) Having no effect on your mean
 - D) Cannot be determined
28. Your current exam mean is 93.2. If you receive a 87 on the next exam, this will have the effect of:
- A) Increasing your mean
 - *B) Decreasing your mean
 - C) Having no effect on your mean
 - D) Cannot determine
29. Your current exam mean is 95. If you receive a 95 on the next exam, this will have the effect of:
- A) Increasing your mean
 - B) Decreasing your mean
 - *C) Having no effect on your mean
 - D) Cannot be determined
30. Which measure of central tendency is most influenced by outliers?
- A) Median
 - B) Mode
 - *C) Mean
 - D) Variance
31. What does the large N represent?
- A) Sample size
 - *B) Population size
 - C) Sum of scores

D) Mean score

32. What does the small n represent?

*A) Sample size

B) Population size

C) Sum of scores

D) Mean score

33. Which measure of central tendency is also known as the midpoint for a set of scores?

A) Mode

B) Mean

*C) Median

D) Sum

34. For which of the following is the sum of the deviations from the mean always equal to zero?

A) Harmonic mean

*B) Arithmetic mean

C) Standard deviation

D) Variance

35. What are Greek letters used to represent?

*A) Population parameters

B) Sample data

C) Sample statistics

D) Outliers

36. The letter μ would be used to represent (a):
*A) Population parameter
B) Sample statistic
C) Inferential data
D) Outliers
37. What are Roman letters used to represent?
A) Population parameters
*B) Sample statistics
C) Sample data
D) Outliers
38. The letter X with a bar over it is used to represent (a):
A) Outliers
*B) Sample statistic
C) Population parameter
D) Inferential statistics
39. Which of the following defines the Median?
A) Sum of all values in a group
B) Most frequently occurring value
C) Average variability in a set of scores
*D) Midpoint in a set of scores
40. What is the Median for the following amounts: \$11.75, \$12.75, \$13.00, \$10.75, \$11.50, \$10.50, \$10.75?
*A) \$11.50
B) \$11.75

- C) \$11.57
 - D) \$11.00
41. What is the Median for the following amounts: \$13,400; \$17,560; \$45,440; \$68,550; \$96,400?
- A) \$13,400
 - B) \$48,240
 - *C) \$45,440
 - D) \$96,400
42. What is the Median of the following set of scores: 23, 17, 15, 32, 38, 47?
- A) 23
 - B) 32
 - C) 17.4
 - *D) 27.5
43. What is the Median of the following set of scores: 1.3, 4.7, 2.3, 3.3, 3.0, 2.9?
- *A) 2.95
 - B) 3.05
 - C) 2.90
 - D) 3.00
44. When there is an even number of scores, how is the Median calculated?
- *A) Average the two middle scores
 - B) Use the smaller of the two middle scores
 - C) Use the larger of the two middle scores
 - D) The Median cannot be calculated

45. With regard to percentile points, what is the median also known as?

- A) Q1
- *B) Q2
- C) Q3
- D) Q4

46. What is the 25th percentile also known as?

- *A) Q1
- B) Q2
- C) Q3
- D) Q4

47. What is the 75th percentile also known as?

- A) Q1
- B) Q2
- *C) Q3
- D) Q4

48. What symbols are used to represent the median?

- A) M
- B) X
- *C) Med or Mdn
- D) \bar{x}

49. What impact do extreme scores have on the median?

- A) Positive skew

- B) Negative skew
 - *C) Minimal impact
 - D) Nullify the value
50. Which of the following are used to define the percentage of case equal to and below a certain point in a distribution of scores?
- A) T scores
 - B) Q points
 - C) Standard scores
 - *D) Percentile points
51. A test score in the 97th percentile would be considered:
- *A) Very high
 - B) Very low
 - C) About average
 - D) Cannot be determined
52. A test score in the third percentile would be considered:
- A) Very high
 - *B) Very low
 - C) About average
 - D) Cannot be determined
53. A test score in the 47th percentile would be considered:
- A) Very high
 - B) Very low
 - *C) About average

D) Cannot be determined

54. If you were to calculate the average of individual income and you found many extreme scores, which measure of central tendency should be used?

A) Mean

*B) Median

C) Mode

D) Standard error

55. If you were to calculate the average of individual income and you found no outliers, which measure of central tendency should you use?

A) Mode

B) Median

*C) Mean

D) Other

56. What does the term "skew" mean?

*A) Significantly distort

B) Divide

C) Add

D) Equalize

57. Which of the following sets of data illustrates skew?

A) 2, 3, 5, 7, 9

B) 450, 472, 523, 547, 601

*C) 23, 37, 42, 51, 147

D) 12, 14, 15, 17, 19

58. What would be your preferred measure of central tendency if you had the following data:
\$32,400; \$42,500; \$47,250; \$49,570; \$145,850?
- A) Mean
 - *B) Median
 - C) Mode
 - D) Weighted mean
59. What would be your preferred measure of central tendency if you had the following data:
\$31,550; \$33,750; \$34,700; \$37,550; \$39,275?
- *A) Mean
 - B) Mode
 - C) Median
 - D) None of the above
60. What would be your preferred measure of central tendency if you had the following data:
23 Americans, 57 Mexicans, and 14 Canadians?
- A) Mean
 - B) Weighted mean
 - C) Median
 - *D) Mode
61. What would be your preferred measure of central tendency if you had the following data:
57 males and 23 females?
- A) Median
 - B) Weighted mean
 - C) Mean
 - *D) Mode
62. Which of the following best describes the Mode?

- A) Sum of all values in a group
- B) Midpoint in a set of scores
- C) Number of subject collected
- *D) Most frequently occurring value(s)

63. The mode will always consist of the following:

- A) The number of cases in the category
- *B) The name of the category
- C) Either A or B can be used
- D) None of the above

64. What is the mode of the following data: 47 Republicans, 49 Democrats, and 52 independents?

- A) 52
- B) Republicans
- C) Democrats
- *D) Independents

65. What is the mode of the following data: 57 males and 43 females?

- A) 57
- *B) Males
- C) Females
- D) Cannot be determined

66. What is the mode of the following data: 52 bowls of spaghetti, 37 bowls of cereal, 14 sandwiches, and 17 personal pizzas?

- A) Bowls of cereal
- B) Sandwiches

- C) 52
- *D) Bowls of spaghetti
67. Which of the following represents a bimodal distribution?
- A) 23 males and 14 females
- B) 43 New Yorkers, 14 Kentuckians, and 7 Wyomingites
- *C) 23 professors and 22 researchers
- D) 14 individuals with blonde hair and 8 individuals with brown hair
68. When describing a set of nominal data, a researcher should use which of the following measures of central tendency?
- *A) Mode
- B) Median
- C) Standard deviation
- D) Mean
69. This is another word for a single observation:
- *A) A data point
- B) Data
- C) A sample
- D) A population
70. Why is the Mean the most frequently used measure of central tendency?
- *A) When the distribution of scores is free of outliers (i.e. extreme scores), the Mean tends to be the most precise measure of central tendency.
71. What is the formula for calculating the Mean? What does each of the symbols represent?

*A) $\Sigma X / n$ where Σ represents summation, X represents individual scores, and n represents the sample size.

72. What is meant by the term outlier?

*A) An outlier refers to any extreme scores in a data set.

73. When might the Median be the appropriate measure of central tendency over the Mean?

*A) When there are extreme scores in a distribution, calculating the Mean would result in skewed results. The Median provides a more accurate measure of the average.

74. What does the term bimodal mean?

*A) Bimodal refers to a distribution of scores that has two different modes, or two scores that occur most frequently.

75. When is the Mode the best measure of central tendency to use?

*A) The Mode should be used when working with categorical or nominal data. Example: gender

76. How would you calculate a weighted mean?

*A) 1. List all values in the sample

2. List the frequency associated with each value

3. Multiply the value by its frequency

4. Sum all "Value x Frequency"

5. Divide by total frequency or n

77. In journal articles and chapters, the median could be reported as Med or Mdn.

*A) True

B) False

78. The example given in the “Real-World Stats” section of your text was about Internet use patterns of adults in several age groups, including middle-aged (ages 40-59), young-old (ages 60-74), and old-old (ages 75-92). When examining the average age of the respondents, which measure of central tendency is most likely to be used to describe them?
- A) Median
 - B) Mean
 - *C) Mode
 - D) Cannot be determined