

Review 5, Statistics

MGF 1106, Miami Dade College, Kendall.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the mean for the group of data items. Round to the nearest hundredth, if necessary.

1) 5.4, 5.9, 7.4, 9.1, 5.4, 9, 5.4, 2, 2, 3.2

A) 4.4

B) 5.28

C) 6.09

D) 5.48

1) \_\_\_\_\_

Find the mean for the data items in the given frequency distribution. Round to the nearest hundredth, if necessary.

2)

Score	Frequency
-------	-----------

x	f
1	4
2	2
3	5
4	7
5	10
6	6
7	9
8	11
9	12
10	12

A) 6

B) 8

C) 6.62

D) 5.23

2) \_\_\_\_\_

Find the median for the group of data items.

3) 1.1, 2.3, 1.5, 2.7, 1.1, 2.3, 1.1, 9.1, 9.1, 1.8

A) 1.8

B) 2.05

C) 2.3

D) 1.1

3) \_\_\_\_\_

Find the mode for the group of data items. If there is no mode, so state.

4) 1.4, 2.2, 1.6, 2.7, 1.4, 2.2, 1.4, 8.2, 8.2, 1.9

A) 1.4

B) 1.6

C) no mode

D) 8.2

4) \_\_\_\_\_

Find the midrange for the group of data items.

5) 1.4, 2.1, 1.6, 2.5, 1.4, 2.1, 1.4, 9.5, 9.5, 2

A) 1.95

B) 1.75

C) 5.55

D) 5.45

5) \_\_\_\_\_

For the given data set, find the a. mean b. median c. mode (or state that there is no mode) d. midrange.

- 6) A company advertised that, on the average, 96% of their customers reported "very high satisfaction with their services. The actual percentages reported in 15 samples were the following: 96, 96, 92, 35, 74, 96, 92, 74, 96, 96, 35, 92, 92, 96, 35 6) \_\_\_\_\_
- a. Find the mean, median, mode and midrange. b. Which measure of central tendency was given in advertisement? c. Which measure of central tendency is the best indicator of the "average" in this situation?
- A) a. mean = 79.8, median = 92, mode = 96, midrange = 65.5  
b. median  
c. mean
- B) a. mean = 79.8, median = 92, mode = 96, midrange = 65.5  
b. mode  
c. median
- C) a. mean = 79.8, median = 92, mode = 96, midrange = 65.5  
b. mode  
c. mode
- D) a. mean = 79.8, median = 92, mode = 96, midrange = 65.5  
b. mode  
c. mean

Find the range for the group of data items.

- 7) 5, 19, 5, 19, 5, 19, 5, 19 7) \_\_\_\_\_
- A) 14 B) 24 C) 19 D) 12

Find the standard deviation for the group of data items (to the nearest hundredth).

- 8) 4, 4, 4, 7, 10, 10, 10 8) \_\_\_\_\_
- A) 2.85 B) 3 C) 9 D) 8.14

Compute the mean, range, and standard deviation for the data items in each of the three samples. Then name one way in which the samples are alike and one way in which they are different.

- 9) Sample A: 11, 13, 15, 17, 19, 21, 23 9) \_\_\_\_\_  
Sample B: 11, 14, 14, 17, 20, 20, 23  
Sample C: 11, 11, 11, 17, 23, 23, 23
- A) Mean (for A, B and C): 17 Range (for A, B, and C): 12 Standard deviation: (A) 7 (B) 4.24 (C) 6.  
Samples have the same mean but different standard deviations.
- B) Mean (A) 13 (B) 14 (C) 15. Range (for A, B, and C): 12 Standard deviation: (A) 6 (B) 6 (C) 6.  
Samples have the same standard deviation but different means.
- C) Mean (for A, B and C): 17 Range (for A, B, and C): 12 Standard deviation: (A) 4.32 (B) 4.24 (C) 6.  
Samples have the same mean but different standard deviations.
- D) Mean (A) 16 (B) 17 (C) 18. Range (for A, B, and C): 12 Standard deviation: (A) 6 (B) 6 (C) 6.  
Samples have the same standard deviation but different means.

Find the a. mean and b. standard deviation for the data set. Round to two decimal places.

10) International Travel Destinations of U.S. Citizens

10) \_\_\_\_\_

Country U.S. Citizens, in thousands

A	992
B	592
C	212
D	192
E	152
F	97
G	95
H	94
I	82
J	72

A) a. 252 b. 300.55

B) a. 258 b. 9000

C) a. 258 b. 300.55

D) a. 252 b. 9000

Provide an appropriate response.

11) In a normal distribution, approximately what percent of data items fall within 1 standard deviation of the mean (in both directions)?

11) \_\_\_\_\_

A) 65%

B) 99.7%

C) 95%

D) 68%

12) If an adult male is told that his height is 3 standard deviations above the mean of the normal distribution of heights of adult males, what can he assume?

12) \_\_\_\_\_

A) He is taller than about 99.7% of the other men whose heights were measured.

B) His height measurement is in the same range as about 99.7% of the other adult males whose heights were measured.

C) He is taller than about 95% of the other men whose heights were measured.

D) His height measurement is in the same range as about 95% of the other adult males whose heights were measured.

The scores on a driver's test are normally distributed with a mean of 100. Find the score that is:

13) Find the score that is 2 standard deviations below the mean, if the standard deviation is 28.

13) \_\_\_\_\_

A) 44

B) 128

C) 156

D) 72

14) Find the score that is  $2\frac{1}{2}$  standard deviations below the mean, if the standard deviation is 26.

14) \_\_\_\_\_

A) 35

B) 74

C) 48

D) 165

15) Find the score that is 2 standard deviations below the mean, if the standard deviation is 21.

15) \_\_\_\_\_

A) 58

B) 121

C) 79

D) 142

16) Find the score that is  $2\frac{1}{2}$  standard deviations below the mean, if the standard deviation is 30.

16) \_\_\_\_\_

A) 25

B) 40

C) 70

D) 175

Suppose that prices of a certain model of new homes are normally distributed with a mean of \$150,000. Use the 68-95-99.7 rule to find the percentage of buyers who paid:

17) between \$150,000 and \$157,500 if the standard deviation is \$2500.

17) \_\_\_\_\_

A) 34%

B) 47.5%

C) 49.85%

D) 99.7%

18) more than \$151,600 if the standard deviation is \$800. 18) \_\_\_\_\_  
A) 97.5% B) 47.5% C) 2.5% D) 95%

19) less than \$145,600 if the standard deviation is \$2200. 19) \_\_\_\_\_  
A) 95% B) 47.5% C) 2.5% D) 97.5%

The scores on a driver's test are normally distributed with a mean of 100. Find the score that is:

20) Find the score that is 2 standard deviations below the mean, if the standard deviation is 18. 20) \_\_\_\_\_  
A) 118 B) 82 C) 64 D) 136

21) Find the score that is  $2\frac{1}{2}$  standard deviations below the mean, if the standard deviation is 22. 21) \_\_\_\_\_  
A) 56 B) 155 C) 45 D) 78

Suppose that prices of a certain model of new homes are normally distributed with a mean of \$150,000. Use the 68-95-99.7 rule to find the percentage of buyers who paid:

22) between \$150,000 and \$153,300 if the standard deviation is \$1100. 22) \_\_\_\_\_  
A) 34% B) 49.85% C) 47.5% D) 99.7%

23) more than \$152,600 if the standard deviation is \$1300. 23) \_\_\_\_\_  
A) 97.5% B) 47.5% C) 95% D) 2.5%

24) less than \$145,800 if the standard deviation is \$2100. 24) \_\_\_\_\_  
A) 2.5% B) 97.5% C) 95% D) 47.5%

A set of data items is normally distributed with a mean of 60. Convert the data item to a z-score, if the standard deviation is as given.

25) data item: 55; standard deviation: 5 25) \_\_\_\_\_  
A) 1 B) -5 C) -1 D) 5

26) data item: 0; standard deviation: 16 26) \_\_\_\_\_  
A) 16 B) -3.75 C) 3.75 D) -16

Use a table of z-scores and percentiles to find the percentage of data items in a normal distribution that lie between:

27)  $z = -0.2$  and  $z = 0.2$  27) \_\_\_\_\_  
A) 50% B) 57.93% C) 42.07% D) 15.86%

28)  $z = -2$  and  $z = -0.6$  28) \_\_\_\_\_  
A) 25.15% B) 2.28% C) 72.57% D) 27.43%

Test scores are normally distributed with a mean of 500. Convert the given score to a z-score, using the given standard deviation. Then find the percentage of students who score:

29) below 650 if the standard deviation is 100. 29) \_\_\_\_\_  
A) 6.68% B) 100% C) 93.32% D) 56.68%

Use a table of z-scores and percentiles to find the percentage (to the nearest whole percentage) of data items in a normal distribution that lie between:

30)  $z = 1$  and  $z = 2$  30) \_\_\_\_\_  
A) 6% B) 8% C) 12% D) 14%