Honors Statistics Ch. 3 Exam

Name_____

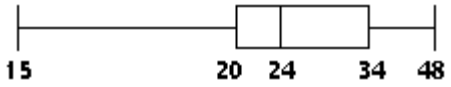
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Construct a boxplot for the given data. Include values of the 5–number summary in all boxplots.

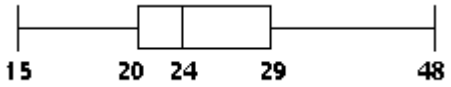
1) The ages of the 35 members of a track and field team are listed below. Construct a boxplot for the data set. 1) _____

15 16 18 18 18 19 20
20 20 21 21 22 22 23
23 24 24 24 25 25 26
27 27 28 29 29 30 31
31 33 34 35 39 42 48

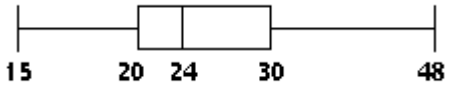
A)



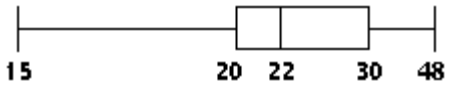
B)



C)



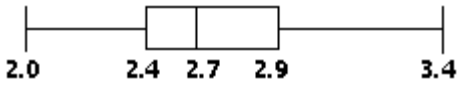
D)



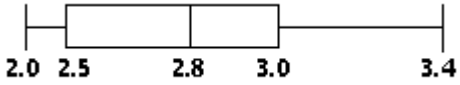
2) The weights (in ounces) of 27 tomatoes are shown below. Construct a boxplot for the data set. 2) _____

2.0 2.1 2.2 2.2 2.4 2.4 2.5 2.5 2.5
2.6 2.6 2.7 2.7 2.7 2.7 2.8 2.8 2.8
2.9 2.9 3.0 3.0 3.0 3.1 3.1 3.2 3.4

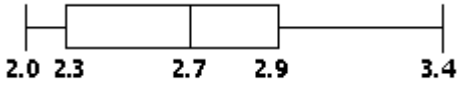
A)



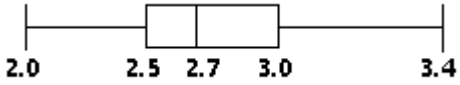
B)



C)



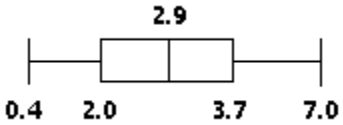
D)



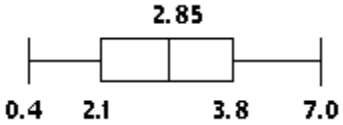
3) The normal monthly precipitation (in inches) for August is listed for 20 different U.S. cities. 3) _____
Construct a boxplot for the data set.

0.4 1.0 1.5 1.6 2.0
2.2 2.4 2.7 3.4 3.4
3.5 3.6 3.6 3.7 3.7
3.9 4.1 4.2 4.2 7.0

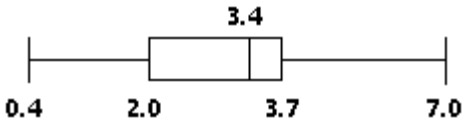
A)



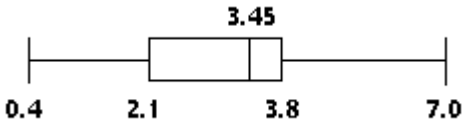
B)



C)



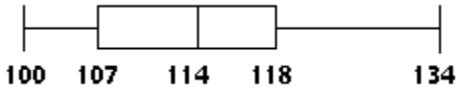
D)



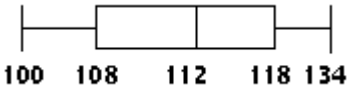
4) The highest temperatures ever recorded (in °F) in 32 different U.S. states are shown below. Construct a boxplot for the data set. 4) _____

100 100 105 105 106 106 107 107
109 110 110 112 112 112 114 114
114 115 116 117 118 118 118 118
118 119 120 121 122 125 128 134

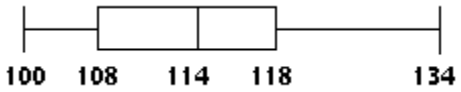
A)



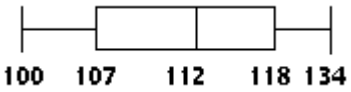
B)



C)



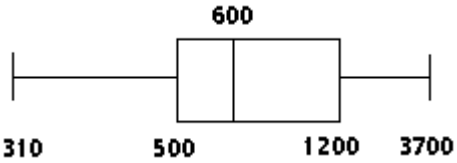
D)



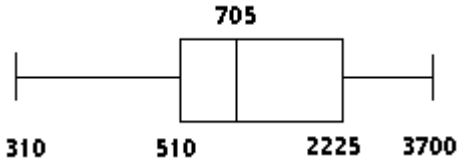
5) The weekly salaries (in dollars) of 24 randomly selected employees of a company are shown below. Construct a boxplot for the data set. 5) _____

310 320 450 460 470 500 520 540
580 600 650 700 710 840 870 900
1000 1200 1250 1300 1400 1720 2500 3700

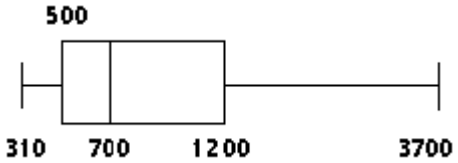
A)



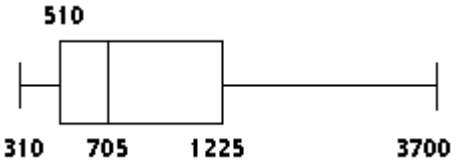
B)



C)



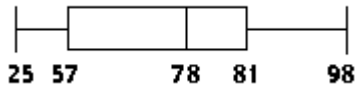
D)



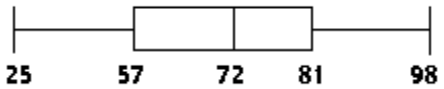
6) The test scores of 40 students are listed below. Construct a boxplot for the data set. 6) _____

25 35 43 44 47 48 54 55 56 57
59 62 63 65 66 68 69 69 71 72
72 73 74 76 77 77 78 79 80 81
81 82 83 85 89 92 93 94 97 98

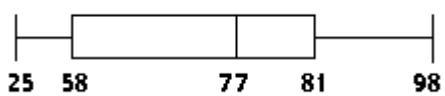
A)



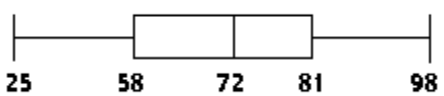
B)



C)



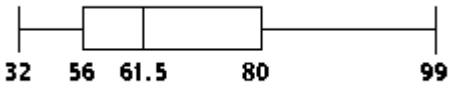
D)



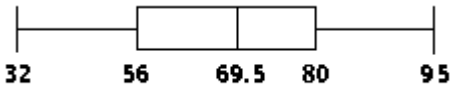
7) The test scores of 32 students are listed below. Construct a boxplot for the data set. 7) _____

32 37 41 44 46 48 53 55
57 57 59 63 65 66 68 69
70 71 74 74 75 77 78 79
81 82 83 86 89 92 95 99

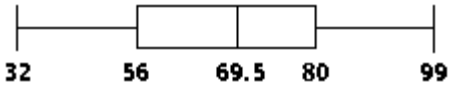
A)



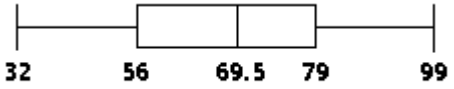
B)



C)



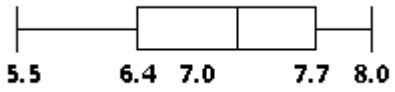
D)



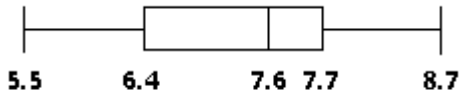
8) The weights (in pounds) of 30 newborn babies are listed below. Construct a boxplot for the data set. 8) _____

5.5 5.7 5.8 5.9 6.1 6.1 6.3 6.4 6.5 6.6
6.7 6.7 6.7 6.9 7.0 7.0 7.0 7.1 7.2 7.2
7.4 7.5 7.7 7.7 7.8 8.0 8.1 8.1 8.3 8.7

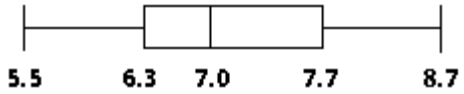
A)



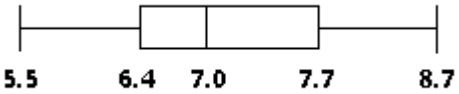
B)



C)



D)

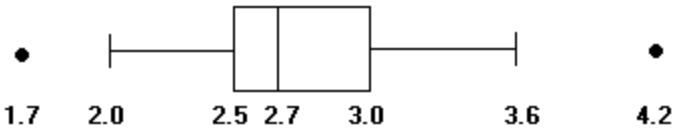


Construct a modified boxplot for the data. Identify any outliers.

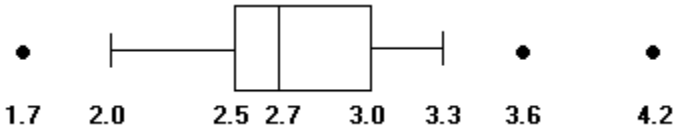
9) The weights (in ounces) of 27 tomatoes are listed below. 9) _____

1.7	2.0	2.2	2.2	2.4	2.5	2.5	2.5	2.6
2.6	2.6	2.7	2.7	2.7	2.8	2.8	2.8	2.9
2.9	2.9	3.0	3.0	3.1	3.1	3.3	3.6	4.2

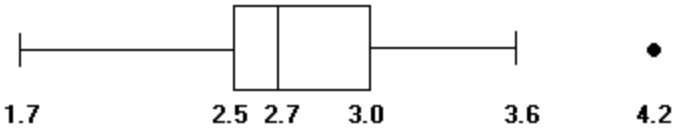
A) Outliers: 1.7 oz, 4.2 oz



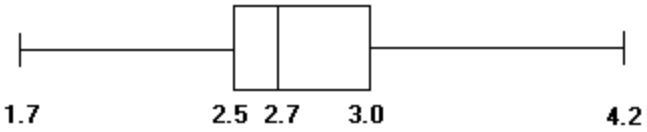
B) Outliers: 1.7 oz, 3.6 oz, 4.2 oz



C) Outlier: 4.2 oz



D) No outliers



Determine which score corresponds to the higher relative position.

10) Which score has the highest relative position: a score of 47.4 on a test for which $\bar{x} = 42$ and $s = 9$, a score of 5.6 on a test for which $\bar{x} = 3.9$ and $s = 1.2$ or a score of 386.8 on a test for which $\bar{x} = 358$ and $s = 48$? 10) _____

A) A score of 5.6 B) A score of 386.8 C) A score of 47.4

11) Which score has a higher relative position, a score of 60 on a test for which $\bar{x} = 53$ and $s = 10$, or a score of 240.3 on a test for which $\bar{x} = 206$ and $s = 49$? 11) _____

A) A score of 240.3
B) A score of 60
C) Both scores have the same relative position.

12) Which score has a higher relative position, a score of 271.2 on a test for which $\bar{x} = 240$ and $s = 24$, or a score of 63.6 on a test for which $\bar{x} = 60$ and $s = 6$? 12) _____

A) Both scores have the same relative position.
B) A score of 63.6
C) A score of 271.2

13) Which is better: a score of 82 on a test with a mean of 70 and a standard deviation of 8, or a score of 82 on a test with a mean of 75 and a standard deviation of 4? 13) _____

A) The first 82
B) The second 82
C) Both scores have the same relative position.

14) Which is better, a score of 92 on a test with a mean of 71 and a standard deviation of 15, or a score of 688 on a test with a mean of 493 and a standard deviation of 150? 14) _____

A) A score of 92
B) Both scores have the same relative position.
C) A score of 688

Find the coefficient of variation for each of the two sets of data, then compare the variation. Round results to one decimal place.

15) Compare the variation in heights to the variation in weights of thirteen–year old girls. The heights (in inches) and weights (in pounds) of nine randomly selected thirteen–year old girls are listed below. 15) _____

Heights (inches):	58.7	61.4	62.1	64.7	60.1	58.3	64.6	63.7	66.1
Weights (pounds):	89	97	93	119	96	90	123	98	139

A) Heights: 4.5%
Weights: 16.8%
There is substantially more variation in the weights than in the heights of the girls.
B) Heights: 4.1%
Weights: 15.2%
There is substantially more variation in the weights than in the heights of the girls.
C) Heights: 11.8%
Weights: 6.3%
There is substantially more variation in the heights than in the weights of the girls.
D) Heights: 4.3%
Weights: 16.0%
There is substantially more variation in the weights than in the heights of the girls.

16) The customer service department of a phone company is experimenting with two different systems. On Monday they try the first system which is based on an automated menu system. On Tuesday they try the second system in which each caller is immediately connected with a live agent. A quality control manager selects a sample of seven calls each day. He records the time for each customer to have his or her question answered. The times (in minutes) are listed below. 16) _____

Automated Menu:	11.7	7.4	3.9	2.9	9.2	6.3	5.5
Live agent:	6.2	2.9	4.4	4.1	3.4	5.2	3.7

A) Automated Menu: 25.2%
Live agent: 41.5%
There is substantially more variation in the times for the live agent.
B) Automated Menu: 48.8%
Live agent: 28.3%
There is substantially more variation in the times for the automated menu system.
C) Automated Menu: 45.4%
Live agent: 26.3%
There is substantially more variation in the times for the automated menu system.
D) Automated Menu: 47.1%
Live agent: 27.3%
There is substantially more variation in the times for the automated menu system.

17) Listed below are the systolic blood pressures (in mm Hg) for a sample of men aged 20–29 and for a sample of men aged 60–69. 17) _____

Men aged 20–29:117 122 129 118 131 123
Men aged 60–69:130 153 141 125 164 139

A) Men aged 20–29: 4.4%
Men aged 60–69: 8.3%
There is substantially more variation in blood pressures of the men aged 60–69.

B) Men aged 20–29: 7.6%
Men aged 60–69: 4.7%
There is more variation in blood pressures of the men aged 20–29.

C) Men aged 20–29: 4.6%
Men aged 60–69: 10.2 %
There is substantially more variation in blood pressures of the men aged 60–69.

D) Men aged 20–29: 4.8%
Men aged 60–69: 10.6%
There is substantially more variation in blood pressures of the men aged 60–69.

Find the indicated measure.

18) The test scores of 40 students are listed below. Find P_{56}. 18) _____

30 35 43 44 47 48 54 55 56 57
59 62 63 65 66 68 69 69 71 72
72 73 74 76 77 77 78 79 80 81
81 82 83 85 89 92 93 94 97 98

A) 22.4 B) 73 C) 73.5 D) 74

19) The test scores of 40 students are listed below. Find P_{85}. 19) _____

30 35 43 44 47 48 54 55 56 57
59 62 63 65 66 68 69 69 71 72
72 73 74 76 77 77 78 79 80 81
81 82 83 85 89 92 93 94 97 98

A) 34 B) 85 C) 89 D) 87

20) The test scores of 32 students are listed below. Find Q_3. 20) _____

32 37 41 44 46 48 53 55
56 57 59 63 65 66 68 69
70 71 74 74 75 77 78 79
80 82 83 86 89 92 95 99

A) 24 B) 79.5 C) 79 D) 80

21) The test scores of 32 students are listed below. Find P_{46}. 21) _____

32 37 41 44 46 48 53 55
56 57 59 63 65 66 68 69
70 71 74 74 75 77 78 79
80 82 83 86 89 92 95 99

A) 15 B) 14.72 C) 67 D) 68

22) The weights (in pounds) of 30 newborn babies are listed below. Find Q_1. 22) _____

5.5 5.7 5.8 6.0 6.1 6.1 6.3 6.4 6.5 6.6
6.7 6.7 6.7 6.9 7.0 7.0 7.0 7.1 7.2 7.2
7.4 7.5 7.7 7.7 7.8 8.0 8.1 8.1 8.3 8.7

A) 5.8 lb B) 6.4 lb C) 6.3 lb D) 7.5 lb

23) The weights (in pounds) of 30 newborn babies are listed below. Find P_{16}. 23) _____

5.5 5.7 5.8 5.9 6.1 6.1 6.4 6.4 6.5 6.6
6.7 6.7 6.7 6.9 7.0 7.0 7.0 7.1 7.2 7.2
7.4 7.5 7.7 7.7 7.8 8.0 8.1 8.1 8.3 8.7

A) 6.1 lb B) 5.9 lb C) 6.0 lb D) 4.8 lb

24) Use the given sample data to find Q_3. 24) _____

49 52 52 52 74 67 55 55

A) 55.0 B) 6.0 C) 67.0 D) 61.0

Find the mean for the given sample data. Unless indicated otherwise, round your answer to one more decimal place than is present in the original data values.

25) The normal monthly precipitation (in inches) for August is listed for 20 different U.S. cities. Find the mean monthly precipitation. 25) _____

3.5 1.6 2.4 3.7 4.1
3.9 1.0 3.6 4.2 3.4
3.7 2.2 1.5 4.2 3.4
2.7 0.4 3.7 2.0 3.6

A) 3.09 in. B) 2.80 in. C) 3.27 in. D) 2.94 in.

26) The local Tupperware dealers earned these commissions last month: 26) _____

$2894.21 $1777.15 $2144.77 $4096.37 $4046.29
$1786.37 $3296.69 $4086.27 $2784.22 $4027.79

What was the mean commission earned? Round your answer to the nearest cent.

A) $3088.01 B) $3437.79 C) $3867.52 D) $3094.01

27) Six college buddies bought each other Christmas gifts. They amounts they spent are shown below. 27) _____

$287.01 $297.04 $290.47
$189.34 $148.59 $274.76

What was the mean amount spent? Round your answer to the nearest cent.

A) $247.87 B) $297.44 C) $371.80 D) $285.44

28) Listed below are the amounts of time (in months) that the employees of a restaurant have been working at the restaurant. Find the mean. 28) _____

1 5 6 8 11 14 17 46 61 90 99 126 143 167

A) 61.1 months B) 56.7 months C) 31.5 months D) 52.9 months

29) Listed below are the amounts of weight change (in pounds) for 12 women during their first year of work after graduating from college. Positive values correspond to women who gained weight and negative values correspond to women who lost weight. What is the mean weight change? 29) _____

3 −8 3 −9 11 −9 14 0 13 −5 14 7

A) 3 lb B) 2.8 lb C) 8 lb D) 3.1 lb

30) The students in Hugh Logan's math class took the Scholastic Aptitude Test. Their math scores are shown below. Find the mean score. 30) _____

516 608 356 352 496
349 350 525 470 482

A) 441.6 B) 450.4 C) 476.0 D) 459.6

31) The amount of time (in hours) that Sam studied for an exam on each of the last five days is given below. Find the mean study time. 31) _____

1.5 8.3 6.9 1.8 5.3

A) 5.45 hr B) 23.80 hr C) 4.76 hr D) 4.96 hr

32) Last year, nine employees of an electronics company retired. Their ages at retirement are listed below. Find the mean retirement age. 32) _____

56 65 62
53 68 58
65 52 56

A) 59.4 yr B) 58.2 yr C) 58.0 yr D) 58.8 yr

33) The weights (in pounds) of six dogs are listed below. Find the mean weight. 33) _____

26 12 100 45 126 84

A) 78.6 lb B) 66 lb C) 65 lb D) 65.5 lb

34) Andrew asked seven of his friends how many cousins they had. The results are listed below. Find the mean number of cousins. 34) _____

15 12 5 14 4 4 6

A) 8.6 cousins B) 8.1 cousins C) 10.1 cousins D) 10 cousins

Find the mean of the data summarized in the given frequency distribution.

35) The heights of a group of professional basketball players are summarized in the frequency distribution below. Find the mean height. Round your answer to one decimal place. 35) _____

Height (in.)	Frequency
70 – 71	1
72 – 73	8
74 – 75	13
76 – 77	8
78 – 79	15
80 – 81	6
82 – 83	3

A) 13.5 in. B) 78.1 in. C) 75.3 in. D) 76.6 in.

36) The manager of a bank recorded the amount of time each customer spent waiting in line during peak business hours one Monday. The frequency distribution below summarizes the results. Find the mean waiting time. Round your answer to one decimal place. 36) _____

Waiting time (minutes)	Number of customers
0 – 3	10
4 – 7	13
8 – 11	12
12 – 15	5
16 – 19	7
20 – 23	1
24 – 27	2

A) 7.1 min B) 13.5 min C) 9.3 min D) 9.4 min

37) The highway speeds of 100 cars are summarized in the frequency distribution below. Find the mean speed. 37) _____

Speed (mph)	Cars
30–39	5
40–49	18
50–59	50
60–69	17
70–79	10

A) 55.4 mph B) 58.2 mph C) 54.5 mph D) 60.9 mph

38) The test scores of 40 students are summarized in the frequency distribution below. Find the mean score. 38) _____

Score	Students
50–59	5
60–69	15
70–79	6
80–89	5
90–99	9

A) 66.6 B) 70.3 C) 74.0 D) 74.5

39) A company had 80 employees whose salaries are summarized in the frequency distribution below. Find the mean salary. 39) _____

Salary ($)	Employees
5,001–10,000	17
10,001–15,000	12
15,001–20,000	12
20,001–25,000	15
25,001–30,000	24

A) $16,706.25 B) $18,562.50 C) $20,418.75 D) $17,500

Find the median for the given sample data.

40) The normal monthly precipitation (in inches) for August is listed for 20 different U.S. cities. Find the median of the data. 40) _____

3.5 1.6 2.4 3.7 4.1
3.9 1.0 3.6 4.2 3.4
3.7 2.2 1.5 4.2 3.4
2.7 0.4 3.7 2.0 3.6

A) 3.40 in. B) 2.94 in. C) 3.45 in. D) 3.50 in.

41) The weights (in ounces) of 21 cookies are shown. Find the median weight. 41) _____

0.88 1.29 0.76 1.62 0.72 0.81 1.20
1.29 1.53 0.91 0.88 1.48 1.17 0.64
0.47 1.48 0.81 1.17 1.72 0.72 0.56

A) 0.64 oz B) 0.78 oz C) 1.29 oz D) 0.91 oz

42) Listed below are the amounts of time (in months) that the employees of a restaurant have been working at the restaurant. Find the median. 42) _____

12 3 6 8.5 13 16 19 34 69 73 99 130 142 167

A) 19 months B) 26.5 months C) 55.8 months D) 60.1 months

43) Listed below are the amounts of weight change (in pounds) for 12 women during their first year of work after graduating from college. Positive values correspond to women who gained weight and negative values correspond to women who lost weight. What is the median weight change? 43) _____

3 −3 5 −9 12 −1 13 0 12 −14 18 7

A) 3.9 lb B) 3.6 lb C) 3 lb D) 4 lb

44) The number of vehicles passing through a bank drive−up line during each 15−minute period was recorded. The results are shown below. Find the median number of vehicles going through the line in a fifteen−minute period. 44) _____

25 27 25 28
28 25 30 27
35 31 31 29
24 31 25 20
15 27 27 27

A) 31 vehicles B) 28 vehicles C) 26.85 vehicles D) 27 vehicles

45) The distances (in miles) driven in the past week by each of a company's sales representatives are listed below. 45) _____

78 126 238 284 310 356

Find the median distance driven.

A) 284 mi B) 261 mi C) 238 mi D) 198.50 mi

46) A store manager kept track of the number of newspapers sold each week over a seven−week period. The results are shown below. 46) _____

81 71 202 113 269 248 242

Find the median number of newspapers sold.

A) 175 newspapers B) 113 newspapers
C) 202 newspapers D) 242 newspapers

47) The ages (in years) of the eight passengers on a bus are listed below. 47) _____

9 1 29 11 22 46 40 35

Find the median age.

A) 25.5 yr B) 24.5 yr C) 29 yr D) 22 yr

48) The temperatures (in degrees Fahrenheit) in 7 different cities on New Year's Day are listed below. 48) _____

25 25 31 53 64 73 83

Find the median temperature.

A) 64°F B) 53°F C) 31°F D) 51°F

Find the midrange for the given sample data.

49) The speeds (in mph) of the cars passing a certain checkpoint are measured by radar. The results are shown below. Find the midrange. 49) _____

44.3 41.4 42.7 40.6 43.1
40.5 44.8 42.0 44.3 42.1
43.4 42.0 40.6 43.4 41.4

A) 42.65 mph B) 4.30 mph C) 42.1 mph D) 42.40 mph

50) The weights (in ounces) of 18 cookies are shown. Find the midrange. 50) _____

0.60 1.32 0.92 0.97 0.72 1.39
1.32 1.24 0.60 1.43 1.36 1.14
1.36 1.43 0.72 1.36 0.97 0.92

A) 1.075 oz B) 1.015 oz C) 0.995 oz D) 1.14 oz

51) Bill kept track of the number of hours he spent exercising each week. The results for 15 weeks are shown below. Find the midrange. 51) _____

7.1 6.8 7.1 7.2 7.8
7.9 6.5 8.4 8.5 7.2
8.5 6.8 7.9 9.0 7.8

A) 2.5 hr B) 7.50 hr C) 7.75 hr D) 7.8 hr

52) Listed below are the amounts of weight change (in pounds) for 12 women during their first year of work after graduating from college. Positive values correspond to women who gained weight and negative values correspond to women who lost weight. What is the midrange? 52) _____

1 −1 4 −18 8 −9 8 0 24 −10 7 7

A) 2.5 lb B) 3 lb C) 11.5 lb D) 21 lb

53) Listed below are the amounts of time (in months) that the employees of an electronics company have been working at the company. Find the midrange. 53) _____

11 21 29 35 49 57 61 61 71 76 85 93 132 142

A) 76.5 months B) 65.5 months C) 65.9 months D) 61 months

54) A meteorologist records the number of clear days in a given year in each of 21 different U.S. cities. The results are shown below. Find the midrange. 54) _____

72 143 52 84 100 98 101
120 99 121 86 60 59 71
125 130 104 74 83 55 169

A) 117 days B) 110.5 days C) 112 days D) 98 days

55) 1.6 2.3 3.1 1.0 1.2 3.8 1.7 3.5 2.2 2.9 1.7 55) _____

A) 2.2 B) 2.25 C) 1.7 D) 2.40

56) 3 6 9 0 4 1 11 5 9 14 3 8 2 15 0 9 56) _____

A) 5.5 B) 8 C) 7.5 D) 15

57) 49 52 52 52 74 67 55 55 57) _____

A) 25 B) 61.5 C) 12.5 D) 53.5

Find the mode(s) for the given sample data.

58) The speeds (in mi/h) of the cars passing a certain checkpoint are measured by radar. The results are shown below. 58) _____

41.8 41.4 44.4 43.7 45.3
45.3 41.4 40.0 47.8 43.7
41.8 40.0 43.7 39.7 41.4
44.1 44.1 44.4 48.8 41.8

A) 41.8, 43.7, 41.4 B) 41.4 C) 42.30 D) 41.8

59) The weights (in ounces) of 14 different apples are shown below. 59) _____

5.0 6.5 6.0 6.2 6.6 5.0 6.5
4.5 5.8 6.2 5.0 4.5 6.2 6.3

A) 5.0 oz, 6.2 oz B) 5.60 oz C) no mode D) 5.0 oz

60) Last year, nine employees of an electronics company retired. Their ages at retirement are listed below. 60) _____

51 61 62 57 50 67 68 58 53

A) no mode
B) 58 yr
C) 58.6 yr
D) 51 yr, 61 yr, 62 yr, 57 yr, 50 yr, 67 yr, 68 yr, 58 yr, 53 yr

61) Listed below are the lengths (in inches) of each snake in the Clarmont Zoo's reptile house. 61) _____

9 15 22 13 16 101 29 10 14 17 102

A) 9 in.,15 in., 22 in., 13 in., 16 in., 101 in., 29 in., 10 in., 14 in., 17 in., 102 in.
B) 9.3 in.
C) no mode
D) 11 in.

62) 97 25 97 13 25 29 56 97 62) _____

A) 54.9 B) 97 C) 42.5 D) 25

63) 7.35 7.41 7.56 7.35 7.88 7.99 7.62 63) _____

A) 7.594 B) 7.35 C) 7.56 D) 7.41

64) 94 33 32 33 29 94 64) _____

A) 52.5 B) 33 C) 94 D) 94, 33

65) 20 42 46 42 49 42 49 65) _____

A) 46 B) 49 C) 42 D) 41.4

66) −20 −45 −46 −45 −49 −45 −49 66) _____

A) −46 B) −42.7 C) −49 D) −45

Find the number of standard deviations from the mean. Round your answer to two decimal places.

67) The number of hours per day a college student spends on homework has a mean of 6 hours and a standard deviation of 1.25 hours. Yesterday she spent 3 hours on homework. How many standard deviations from the mean is that? 67) _____

A) 1.20 standard deviations above the mean B) 1.20 standard deviations below the mean

C) 2.40 standard deviations above the mean D) 2.40 standard deviations below the mean

68) The number of assists per match for the setter on your school's volleyball team has a mean of 55 and a standard deviation of 7. How many standard deviations from the mean is an outing with 70 assists? 68) _____

A) 2.14 standard deviations above the mean B) 2.14 standard deviations below the mean

C) 1.07 standard deviations below the mean D) 1.07 standard deviations above the mean

69) Mario's weekly poker winnings have a mean of $353 and a standard deviation of $67. Last week he won $185. How many standard deviations from the mean is that? 69) _____

A) 1.25 standard deviations above the mean B) 2.51 standard deviations below the mean

C) 1.25 standard deviations below the mean D) 2.51 standard deviations above the mean

70) In one town, the number of pounds of sugar consumed per person per year has a mean of 8 pounds and a standard deviation of 1.7 pounds. Tyler consumed 11 pounds of sugar last year. How many standard deviations from the mean is that? 70) _____

A) 1.00 standard deviations above the mean B) 1.76 standard deviations below the mean

C) 1.76 standard deviations above the mean D) 1.00 standard deviations below the mean

71) The test scores on the Chapter 10 mathematics test have a mean of 52 and a standard deviation of 10. Andrea scored 86 on the test. How many standard deviations from the mean is that? 71) _____

A) 3.40 standard deviations above the mean B) 0.49 standard deviations above the mean

C) 3.40 standard deviations below the mean D) 0.49 standard deviations below the mean

72) The annual snowfall in a town has a mean of 35 inches and a standard deviation of 11 inches. Last year there were 60 inches of snow. How many standard deviations from the mean is that? 72) _____

A) 2.27 standard deviations above the mean B) 2.27 standard deviations below the mean

C) 0.40 standard deviations above the mean D) 0.40 standard deviations below the mean

Find the percentile for the data value.

73) In a data set with a range of 55.4 to 105.4 and 400 observations, there are 276 observations with values less than 86. Find the percentile for 86. 73) _____

A) 32 B) 612 C) 122.56 D) 69

74) Data set: 122 134 126 120 128 130 120 118 125 122 126 136 118 122 124 119; data value: 128 74) _____

A) 70 B) 75 C) 62 D) 85

75) Data set: 3 13 10 6 3 3 13 6 3 13 2 13 15 4 9 3 12 10 6 13; data value: 6 75) _____

A) 35 B) 62 C) 25 D) 40

76) Data set: 12 18 42 24 12 30 54 54 66 18 18 54 36 6 54; 76) _____
data value: 42
A) 60 B) 52 C) 35 D) 70

77) Data set: 52 31 47 69 73 71 30; 77) _____
data value: 52
A) 43 B) 57 C) 20 D) 50

Find the range for the given sample data.

78) Fred, a local mechanic, recorded the price of an oil and filter change at twelve competing service stations. The prices (in dollars) are shown below. 78) _____
32.99 24.95 26.95 28.95
18.95 28.99 30.95 22.95
24.95 26.95 29.95 28.95
A) $12.00 B) $14.04 C) $32.99 D) $10.05

79) The manager of an electrical supply store measured the diameters of the rolls of wire in the inventory. The diameters of the rolls (in meters) are listed below. 79) _____
0.229 0.119 0.465 0.406 0.596 0.29
A) 0.465 m B) 0.061 m C) 0.477 m D) 0.119 m

80) A class of sixth grade students kept accurate records on the amount of time they spent playing video games during a one-week period. The times (in hours) are listed below: 80) _____
25.7 13.6 9.2 14.2 18.6
30.4 19.8 14.0 24.6 24.1
A) 18.6 hr B) 12.1 hr C) 9.2 hr D) 21.2 hr

81) Listed below are the amounts of weight change (in pounds) for ten women during their first year of work after graduating from college. Positive values correspond to women who gained weight and negative values correspond to women who lost weight. What is the range? 81) _____
3 9 5 12 −1 27 0 −8 7 −1
A) 35 lb B) 19 lb C) 4 lb D) 27 lb

82) The amounts below represent the last twelve transactions made to Juan's checking account. Positive numbers represent deposits and negative numbers represent debits from his account. 82) _____
$28 −$20 $67 −$22 −$15 $17 −$38 $41 $53 −$13 $30 $75
A) $75 B) $113 C) $37 D) −$113

83) Jeremy called eight appliance stores and asked the price of a specific model of microwave oven. The prices quoted are listed below: 83) _____
$116 $479 $144 $606 $369 $252 $317 $492
A) $479 B) $108 C) $490 D) $116

84) The owner of a small manufacturing plant employs six people. As part of their personnel file, she asked each employee to record the distance they travel one way from home to work. The six distances (in miles) are listed below: 84) _____
2.1 5.6 1.5 4.8 6.1 3.5
A) 1.4 mi B) 4.6 mi C) 1.5 mi D) 5.6 mi

85) The prices (in dollars) of 12 electric smoothtop ranges are listed below. 85) _____

865 1010 655 565 1465 1110
710 765 820 1310 555 1065

A) $920 B) $900 C) $930 D) $910

86) Jorge has his own business as a painter. The amounts he made in the last five months are shown below. 86) _____

$2426 $2463 $1451 $2154 $1119

A) $975 B) $1344 C) $1307 D) $1012

87) Rich Borne teaches Chemistry 101. Last week he gave his students a quiz. Their scores are listed below. 87) _____

24 31 47 29 31 16 48 41 50 54 37 22

A) 54 B) 38 C) 16 D) 7

Find the range, variance, and standard deviation for each of the two samples, then compare the two sets of results.

88) When investigating times required for drive–through service, the following results (in seconds) were obtained. 88) _____

Restaurant A	120	123	153	128	124	118	154	110
Restaurant B	115	126	147	156	118	110	145	137

A) Restaurant A: 44 sec; 260.79 sec^2; 16.15 sec
Restaurant B: 46 sec; 245.64 sec^2; 15.67 sec
There is more variation in the times for restaurant A.

B) Restaurant A: 46 sec; 260.79 sec^2; 16.15 sec
Restaurant B: 44 sec; 285.64 sec^2; 16.90 sec
There is more variation in the times for restaurant B.

C) Restaurant A: 44 sec; 260.79 sec^2; 16.15 sec
Restaurant B: 46 sec; 285.64 sec^2; 16.90 sec
There is more variation in the times for restaurant B.

D) Restaurant A: 44 sec; 298.34 sec^2; 17.27 sec
Restaurant B: 46 sec; 285.64 sec^2; 16.90 sec
There is more variation in the times for restaurant A.

89) When investigating times required for drive–through service, the following results (in seconds) were obtained. 89) _____

Restaurant A	120	67	89	97	124	68	72	96
Restaurant B	115	126	49	56	98	76	78	95

A) Restaurant A: 57 sec; 493.98 sec^2; 22.23 sec
Restaurant B: 56 sec; 727.98 sec^2; 32.89 sec
There is more variation in the times for restaurant B.

B) Restaurant A: 57 sec; 793.98 sec^2; 28.18 sec
Restaurant B: 77 sec; 727.98 sec^2; 26.98 sec
There is more variation in the times for restaurant A.

C) 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.

D) Restaurant A: 75 sec; 493.98 sec^2; 22.23 sec
Restaurant B: 70 sec; 727.98 sec^2; 26.98 sec
There is more variation in the times for restaurant B.

Find the standard deviation for the given sample data. Round your answer to one more decimal place than is present in the original data.

90) The manager of an electrical supply store measured the diameters of the rolls of wire in the inventory. The diameters of the rolls (in meters) are listed below. 90) _____

0.151 0.303 0.195 0.122 0.549 0.642 0.497

A) 0.122 m B) 1.1281 m C) 0.8638 m D) 0.2099 m

91) Listed below are the amounts of time (in months) that the employees of a restaurant have been working at the restaurant. 91) _____

2 3 6 17 22 40 54 73 101 122

A) 43.9 months B) 42.7 months C) 41.5 months D) 40.5 months

92) Listed below are the amounts of weight change (in pounds) for 12 women during their first year of work after graduating from college. Positive values correspond to women who gained weight and negative values correspond to women who lost weight. 92) _____

15 −5 14 8 −1 10 −6 1 0 4 −3 9

A) 6.9 lb B) 7.4 lb C) 7.2 lb D) 7.6 lb

93) The numbers listed below represent the amount of precipitation (in inches) last year in six different U.S. cities. 93) _____

14.7 15.1 31.6 42.6 17.7 18.8

A) 3924.2 in. B) 37.1 in. C) 3290.0 in. D) 11.26 in.

94) To get the best deal on a CD player, Tom called eight appliance stores and asked the cost of a specific model. The prices he was quoted are listed below: 94) _____

$356 $169 $293 $267 $386 $288 $318 $275

A) $721,124.0 B) $691,488.0 C) $65.1 D) $330.5

95) The top nine scores on the organic chemistry midterm are as follows. 95) _____

47, 55, 71, 41, 82, 57, 25, 66, 81

A) 20.2 B) 7.3 C) 17.8 D) 18.9

96) Christine is currently taking college astronomy. The instructor often gives quizzes. On the past seven quizzes, Christine got the following scores: 96) _____

55 18 39 20 20 44 69

A) 10,032.1 B) 19.7 C) 12,367 D) 39

97) 22.6 16.1 36.1 36.0 23.8 20.3 97) _____

A) 3999.0 B) 36.1 C) 4347.7 D) 8.35

98) 153 133 256 155 242 233 264 182 128 98) _____

A) 54.8 B) 58.5 C) 24.3 D) 51.6

99) 18 18 18 9 15 5 10 5 15 99) _____

A) 5.1 B) 5.8 C) 1.6 D) 5.4

Find the standard deviation of the data summarized in the given frequency distribution.

100) The heights of a group of professional basketball players are summarized in the frequency distribution below. Find the standard deviation. Round your answer to one decimal place. 100) _____

Height (in.)	Frequency
70–71	3
72–73	7
74–75	16
76–77	12
78–79	10
80–81	4
82–83	1

A) 3.2 in. B) 2.8 in. C) 2.9 in. D) 3.3 in.

101) The manager of a bank recorded the amount of time each customer spent waiting in line during peak business hours one Monday. The frequency distribution below summarizes the results. Find the standard deviation. Round your answer to one decimal place. 101) _____

Waiting time (minutes)	Number of customer
0–3	13
4–7	13
8–11	10
12–15	11
16–19	0
20–23	3

A) 5.9 min B) 5.6 min C) 5.3 min D) 7.0 min

102) The test scores of 40 students are summarized in the frequency distribution below. Find the standard deviation. 102) _____

Score	Students
50–59	5
60–69	7
70–79	9
80–89	10
90–99	9

A) 12.7 B) 14.1 C) 12.1 D) 13.4

103) A company had 80 employees whose salaries are summarized in the frequency distribution below. Find the standard deviation. 103) _____

Salary (dollars)	Employees
5,001–10,000	19
10,001–15,000	14
15,001–20,000	12
20,001–25,000	16
25,001–30,000	19

A) $8422.8 B) $8195.1 C) $7967.5 D) $7588.1

Find the variance for the given data. Round your answer to one more decimal place than the original data.

104) The normal monthly precipitation (in inches) for August is listed for 12 different U.S. cities. 104) _____

3.5 1.6 2.4 3.7 4.1 3.9
1.0 3.6 4.2 3.4 3.7 2.2

A) 1.09 $in.^2$ B) 1.00 $in.^2$ C) 0.94 $in.^2$ D) 1.05 $in.^2$

105) The weights (in ounces) of 10 cookies are shown. 105) _____

1.4 0.99 1.37 0.58 0.68
0.57 1.1 0.96 1.2 1.27

A) 0.088 oz^2 B) 0.074 oz^2 C) 0.08 oz^2 D) 0.098 oz^2

106) A class of sixth grade students kept accurate records on the amount of time they spent playing video games during a one–week period. The times (in hours) are listed below: 106) _____

30.9 28.0 23.9 15.8 26.5
15.3 12.7 14.6 25.6 10.4

A) 48.46 hr^2 B) 215.45 hr^2 C) 53.84 hr^2 D) 53.74 hr^2

107) To get the best deal on a microwave oven, Jeremy called six appliance stores and asked the cost of a specific model. The prices he was quoted are listed below: 107) _____

$663 $273 $410 $622 $174 $374

A) 36,838.3 $dollars^2$ B) 36,838.2 $dollars^2$
C) 30,698.6 $dollars^2$ D) 1,207,582.7 $dollars^2$

108) The owner of a small manufacturing plant employs six people. As part of their personnel file, she asked each one to record to the nearest one–tenth of a mile the distance they travel one way from home to work. The six distances are listed below: 108) _____

26 32 29 16 45 19

A) 18.9 mi^2 B) 5043.6 mi^2 C) 107.0 mi^2 D) 15.8 mi^2

109) Jeanne is currently taking college zoology. The instructor often gives quizzes. On the past five quizzes, Jeanne got the following scores: 109) _____

5 3 16 1 20

A) 88.4 B) 71.4 C) 57.2 D) 71.5

110) 11.0 17.6 12.6 11.7 16.5 110) _____

A) 8.85 B) 48.98 C) 7.08 D) 8.75

111) 7 7 2 5 1 111) _____

A) 7.7 B) 7.8 C) 11.8 D) 6.2

112) 7.9 8.8 1.9 3.1 2.5 112) _____

A) 10.55 B) 10.45 C) 15.43 D) 8.44

113) 18 16 12 2 11 113) _____

A) 38.2 B) 67.2 C) 38.1 D) 30.6

Find the z–score corresponding to the given value and use the z–score to determine whether the value is unusual. Consider a score to be unusual if its z–score is less than –2.00 or greater than 2.00. Round the z–score to the nearest tenth if necessary.

114) A time for the 100 meter sprint of 14.9 seconds at a school where the mean time for the 100 meter sprint is 17.6 seconds and the standard deviation is 2.1 seconds. 114) _____

A) 1.3; not unusual B) –1.3; not unusual

C) –1.3; unusual D) –2.7; unusual

115) A weight of 224 pounds among a population having a mean weight of 158 pounds and a standard deviation of 23.5 pounds. 115) _____

A) –2.8; not unusual B) 2.8; unusual

C) 2.8; not unusual D) 65.8; unusual

116) A body temperature of 96.7° F given that human body temperatures have a mean of 98.20° F and a standard deviation of 0.62°. 116) _____

A) –2.4; unusual B) –2.4; not unusual

C) –1.5; not usual D) 2.4; unusual

117) A test score of 48.4 on a test having a mean of 66 and a standard deviation of 11. 117) _____

A) 1.6; not unusual B) –1.6; not unusual

C) –1.6; unusual D) –17.6; unusual

Provide an appropriate response.

118) When finding percentiles, if the locator L is not a whole number, one procedure is to interpolate so that a locator of 23.75, for example, leads to a value that is 3/4 of the way between the 23rd and 24th scores. Use this method of interpolation to find P_{75} for the set of test scores below. 118) _____

51 54 64 68 72 74
76 83 94 94 99

A) 83 B) 85.75 C) 94 D) 88.5

119) Which of the following statements regarding percentiles is true? (More than one statement may be true). 119) _____

A : In any data set, P_{90} is greater than P_{80}

B: In any data set, $\frac{P_{10} + P_{90}}{2}$ is equal to Q_2

C: In a set of 20 test scores, the percentile of the second highest score is 95

A) C B) B

C) A D) All of the above

120) In a data set containing n values, the 67th percentile can be found as follows: 120) _____

$$P_{67} = \frac{67}{100} \cdot n.$$

True or false?

A) False B) True

121) Suppose that all the values in a data set are converted to z–scores. Which of the statements below is true? 121) _____

A: The mean of the z–scores will be zero, and the standard deviation of the z–scores will be the same as the standard deviation of the original data values.
B: The mean and standard deviation of the z–scores will be the same as the mean and standard deviation of the original data values.
C: The mean of the z–scores will be 0, and the standard deviation of the z–scores will be 1.
D: The mean and the standard deviation of the z–scores will both be zero.

A) B B) D C) C D) A

122) If all the values in a data set are converted to z–scores, the shape of the distribution of the z–scores will be the same as the distribution of the original data. True or false? 122) _____

A) True B) False

123) If all the values in a data set are converted to z–scores, the shape of the distribution of the z–scores will be bell–shaped regardless of the distribution of the original data. True or false? 123) _____

A) False B) True

124) Human body temperatures have a mean of 98.20° F and a standard deviation of 0.62°. Sally's temperature can be described by z = –1.5. What is her temperature? Round your answer to the nearest hundredth. 124) _____

A) 97.27°F B) 99.13°F C) 95.79°F D) 96.70°F

125) For data which are heavily skewed to the right, P_{10} is likely to be closer to the median than P_{90}. 125) _____

True or false?

A) True B) False

Solve the problem.

126) For any data set of n values with standard deviation s, every value must be within $s\sqrt{n-1}$ of the mean. In a class of 20 students, the heights of the students have a mean of 67.4 inches and a standard deviation of 3.0 inches. The tallest student in class, a hopeful member of the basketball team, claims to be 79.8 inches tall. Could he be telling the truth? 126) _____

A) No B) Yes

127) If the standard deviation of a set of data is zero, what can you conclude about the set of values? 127) _____

A) All values are equal to zero.
B) The sum of the deviations from the mean is zero.
C) All values are identical.
D) The sum of the values is zero.

128) Skewness can be measured by Pearson's index of skewness: 128) _____

$$I = \frac{3(\bar{x} - \text{median})}{s}$$

If $I \geq 1.00$ or $I \leq -1.00$, the data can be considered significantly skewed. Find Pearson's index of skewness for the test scores below.

68 80 37 94 72 42
75 89 84 73 89

A) −0.34 B) −0.32 C) 0.32 D) −0.27

129) The signal–to–noise ratio of a set of data is obtained by dividing the mean by the standard deviation. Find the signal–to–noise ratio for the following sample of weights (in pounds): 129) _____

128 147 186 105 197
155 172 130 116 125

A) 0.2 B) 4.9 C) 4.5 D) 4.7

130) The coefficient of variation, expressed as a percent, is used to describe the standard deviation relative to the mean. It allows us to compare variability of data sets with different measurement units and is calculated as follows: 130) _____

$$\text{coefficient of variation} = 100\,(s/\bar{x})$$

Find the coefficient of variation for the following sample of weights (in pounds):

159 150 186 105 197
130 172 121 116 125

A) 26.5% B) 21.6% C) 23.7% D) 18.9%

131) The ages of the members of a gym have a mean of 44 years and a standard deviation of 12 years. What can you conclude from Chebyshev's theorem about the percentage of gym members aged between 26 and 62? 131) _____

A) The percentage is approximately 33.3%
B) The percentage is at most 55.6%
C) The percentage is at least 55.6%
D) The percentage is at least 33.3%

132) The heights of the adults in one town have a mean of 67.1 inches and a standard deviation of 3.5 inches. What can you conclude from Chebyshev's theorem about the percentage of adults in the town whose heights are between 60.1 and 74.1 inches? 132) _____

A) The percentage is at least 95%
B) The percentage is at most 75%
C) The percentage is at most 95%
D) The percentage is at least 75%

133) The data below consists of the heights (in inches) of 20 randomly selected women. Find the 10% trimmed mean of the data set. The 10% trimmed mean is found by arranging the data in order, deleting the bottom 10% of the values and the top 10% of the values and then calculating the mean of the remaining values. 133) _____

67 68 64 61 65 64 70 67 62 63
61 64 75 67 60 59 64 68 65 71

A) 65.3 in. B) 65.0 in. C) 52.0 in. D) 65.1 in.

134) When data are summarized in a frequency distribution, the median can be found by first identifying the median class (the class that contains the median). We then assume that the values in that class are evenly distributed and we can interpolate. This process can be described by 134) _____

$$\text{median} = (\text{lower limit of median class}) + (\text{class width})\left(\frac{\frac{n+1}{2} - (m+1)}{\text{frequency of median class}}\right)$$

where n is the sum of all class frequencies and m is the sum of the class frequencies that precede the median class. Use this procedure to find the median of the frequency distribution below:

Score	Frequency
50–59	21
60–69	24
70–79	22
80–89	16
90–99	17

A) 74.5 B) 72.0 C) 71.8 D) 72.5

135) The quadratic mean (or root mean square) is usually used in physical applications. In power distribution systems, for example, voltages and currents are usually referred to in terms of their root mean square value. The quadratic mean of a set of values is obtained by squaring each value, adding the results, dividing by the number of values (n), and then taking the square root of that result, expressed as 135) _____

$$\text{quadratic mean} = \sqrt{\frac{\sum x^2}{n}}$$

Find the root mean square of these power supplies (in volts): 110, 105, 10, 72.

A) 42.1 volts B) 74.3 volts C) 84.3 volts D) 148.5 volts

136) The harmonic mean is often used as a measure of center for data sets consisting of rates of change, such as speeds. It is found by dividing the number of values (n) by the sum of the reciprocals of all values, expressed as 136) _____

$$\frac{n}{\sum(1/x)}.$$

Pierre drives to work (a distance of 54 miles) at a speed of 74 mph and returns home at a speed of 53 mph. What is his average speed for the round trip? Use the harmonic mean.

A) 62.6 mph B) 63.6 mph C) 61.8 mph D) 63.5 mph

137) The geometric mean is often used in business and economics for finding average rates of change, average rates of growth, or average ratios. Given n values (all positive), the geometric mean is the nth root of their product. The average growth factor for money compounded at annual interest rates of 34%, 26%, 24%, and 22% can be found by computing the geometric mean of 1.34, 1.26, 1.24, and 1.22. Find that average growth factor. 137) _____

A) 1.5982 B) 1.2642 C) 0.6386 D) 0.0187

138) A student earned grades of A, C, A, A, and B. Those courses had these corresponding numbers of credit hours: 1, 6, 4, 1, 4. The grading system assigns quality points to letter grades as follows: A = 4, B = 3, C = 2, D = 1, and F = 0. Compute the grade point average (GPA) and round the result to two decimal places. 138) _____

A) 2.00 B) 4.00 C) 9.60 D) 3.00

139) A student earned grades of B, B, A, C, and D. Those courses had these corresponding numbers of credit hours: 4, 5, 1, 5, 4. The grading system assigns quality points to letter grades as follows: A = 4, B = 3, C = 2, D = 1, and F = 0. Compute the grade point average (GPA) and round the result to two decimal places. 139) _____

A) 3.46 B) 1.37 C) 9.00 D) 2.37

140) A student earned grades of C, A, B, and A. Those courses had these corresponding numbers of credit hours: 3, 6, 2, and 6. The grading system assigns quality points to letter grades as follows: A = 4, B = 3, C = 2, D = 1, and F = 0. Compute the grade point average (GPA) and round the result to two decimal places. 140) _____

A) 4.00 B) 2.38 C) 11.00 D) 3.53

141) A student earned grades of 84, 78, 84, and 72 on her four regular tests. She earned a grade of 78 on the final exam and 86 on her class projects. Her combined homework grade was 87. The four regular tests count for 40% of the final grade, the final exam counts for 30%, the project counts for 10%, and homework counts for 20%. What is her weighted mean grade? Round to one decimal place. 141) _____

A) 80.2 B) 82.1 C) 81.2 D) 81.3

142) Michael gets test grades of 75, 79, 82, and 87. He gets a 88 on her final exam. Find the weighted mean if the tests each count for 15% and the final exam counts for 40% of the final grade. Round to one decimal place. 142) _____

A) 83.7 B) −77.8 C) 245.2 D) 82.2

143) Elaine gets quiz grades of 90, 83, and 64. She gets a 69 on her final exam. Find the weighted mean if the quizzes each count for 20% and the final exam counts for 40% of the final grade. Round to one decimal place. 143) _____

A) 76.5 B) 74.0 C) 75.0 D) 79.2

Solve the problem. Round results to the nearest hundredth.

144) A department store, on average, has daily sales of $28,372.72. The standard deviation of sales is $ 2000. On Tuesday, the store sold $34,885.21 worth of goods. Find Tuesday's z score. Was Tuesday an unusually good day? 144) _____

A) 2.61, no B) 3.42, no C) 3.57, yes D) 3.26, yes

145) The mean height of a basketball team is 6 feet with a standard deviation of 0.2 feet. The team's center is 6.9 feet tall. Find the center's z score. Is his score unusual? 145) _____

A) 3.83, no B) 4.95, yes C) 4, no D) 4.5, yes

146) The mean of a set of data is 108.06 and its standard deviation is 115.45. Find the z score for a value of 489.67. 146) _____

A) 3.61 B) 3.64 C) 2.98 D) 3.31

147) The mean of a set of data is −2.91 and its standard deviation is 3.88. Find the z score for a value of 2.80. 147) _____

A) 1.62 B) 1.32 C) 1.77 D) 1.47

148) The mean of a set of data is 4.11 and its standard deviation is 3.03. Find the z score for a value of 10.86. 148) _____

A) 2.01 B) 2.53 C) 2.23 D) 2.45

149) Scores on a test have a mean of 66 and a standard deviation of 9. Michelle has a score of 57. Convert Michelle's score to a z-score. 149) _____

A) 1 B) -9 C) -1 D) 9

Use the empirical rule to solve the problem.

150) The amount of Jen's monthly phone bill is normally distributed with a mean of $55 and a standard deviation of $12. What percentage of her phone bills are between $19 and $91? 150) _____

A) 68% B) 99.99% C) 99.7% D) 95%

151) At one college, GPA's are normally distributed with a mean of 3 and a standard deviation of 0.6. What percentage of students at the college have a GPA between 2.4 and 3.6? 151) _____

A) 84.13% B) 95% C) 68% D) 99.7%

152) The systolic blood pressure of 18-year-old women is normally distributed with a mean of 120 mmHg and a standard deviation of 12 mmHg. What percentage of 18-year-old women have a systolic blood pressure between 96 mmHg and 144 mmHg? 152) _____

A) 95% B) 68% C) 99.99% D) 99.7%

Use the range rule of thumb to estimate the standard deviation. Round results to the nearest tenth.

153) A distribution of data has a maximum value of 83, a median value of 62.5, and a minimum of 42. 153) _____

A) 8.2 B) 20.5 C) 5.5 D) 10.3

154) The maximum value of a distribution is 40.8 and the minimum value is 2.4. 154) _____

A) 6.6 B) 9.6 C) 14.6 D) 14.4

155) The following is a set of data showing the water temperature in a heated tub at different time intervals. 155) _____

114.7 113.5 116.7 113.7 115.5 115.1 112.8 113.3

A) 1.3 B) -55.9 C) 1.0 D) 0.8

156) The race speeds for the top eight cars in a 200-mile race are listed below. 156) _____

181.0 180.6 189.2 182.2 175.6 180.0 177.9 181.8

A) 6.8 B) 3.4 C) 7.5 D) 1.1

157) The heights in feet of people who work in an office are as follows. 157) _____

5.8 5.9 6.1 5.4 6.0 5.8 5.9 6.2 5.7 5.8

A) 0.2 B) 0.5 C) 0.1 D) 1.2

1) C
2) D
3) D
4) C
5) D
6) D
7) C
8) D
9) A
10) A
11) C
12) C
13) B
14) A
15) A
16) C
17) C
18) D
19) D
20) B
21) D
22) B
23) A
24) D
25) D
26) D
27) A
28) B
29) B
30) B
31) C
32) A
33) D
34) A
35) D
36) C
37) A
38) C
39) B
40) C
41) D
42) B
43) D
44) D
45) B
46) C
47) A
48) B
49) A
50) B

51) C
52) B
53) A
54) B
55) D
56) C
57) B
58) A
59) A
60) A
61) C
62) B
63) B
64) D
65) C
66) D
67) D
68) A
69) B
70) C
71) A
72) A
73) D
74) B
75) A
76) A
77) A
78) B
79) C
80) D
81) A
82) B
83) C
84) B
85) D
86) B
87) B
88) C
89) C
90) D
91) B
92) C
93) D
94) C
95) D
96) B
97) D
98) A
99) D
100) B

101) B
102) D
103) D
104) A
105) D
106) C
107) A
108) C
109) D
110) A
111) B
112) A
113) A
114) B
115) B
116) A
117) B
118) B
119) C
120) A
121) C
122) A
123) A
124) A
125) A
126) B
127) C
128) B
129) D
130) B
131) C
132) D
133) B
134) B
135) C
136) C
137) B
138) D
139) D
140) D
141) C
142) A
143) C
144) D
145) D
146) D
147) D
148) C
149) C
150) C

151) C
152) A
153) D
154) B
155) C
156) B
157) A