Name_____

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

Use Chebyshev's theorem to solve the problem.

1) In a certain distribution of numbers, the mean is 50 and the standard deviation is 6. What can you say about   1) _____
   the fraction of numbers that lie between 32 and 68?

   A) at least $\frac{2}{3}$ B) at most $\frac{8}{9}$ C) at least $\frac{8}{9}$ D) at most $\frac{2}{3}$

2) Find the least possible fraction of numbers in a data set lying within 5 standard deviations of the mean.   2) _____

   A) $\frac{1}{25}$ B) $\frac{4}{5}$ C) $\frac{1}{5}$ D) $\frac{24}{25}$

Use the graph to answer the question.
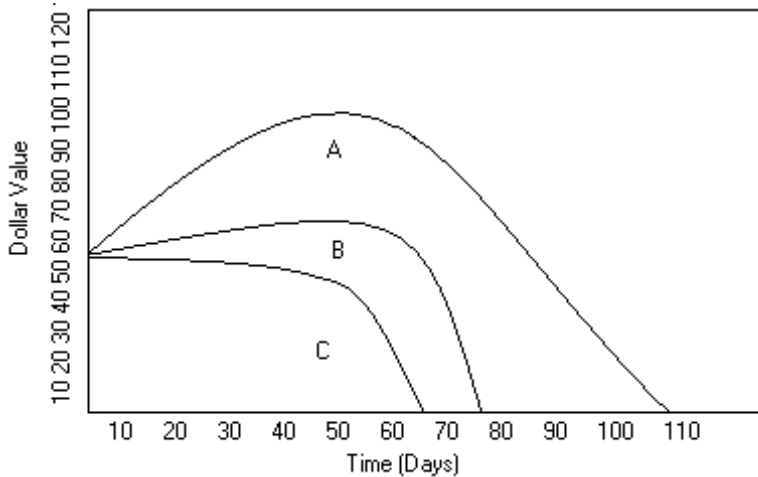
3)   3) _____
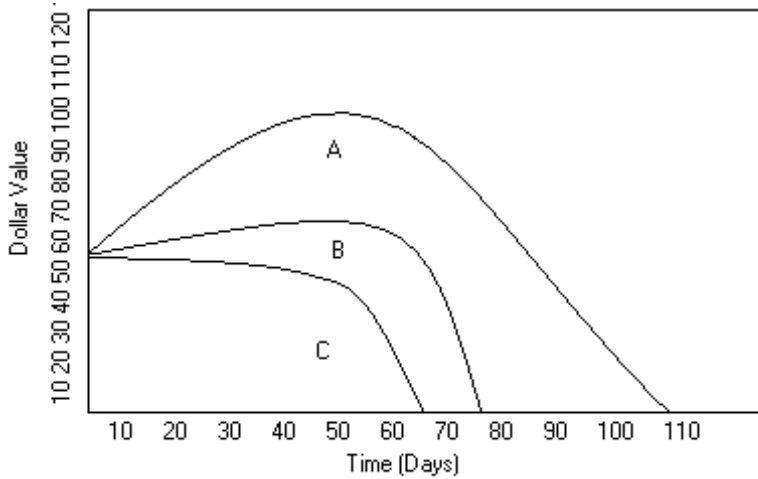

Mike decides to buy shares of companies A, B, and C, which were initially selling for the same price. The
changes in each stock's value are shown in the graph above. At its peak, stock A was valued at
approximately how much more than either B or C?

   A) $15   B) $10   C) $30   D) $35

4)

Mike decides to buy shares of companies A, B, and C, which were initially selling for the same price. The changes in each stock's value are shown in the graph above. Knowing what he knows now, after how many days should he have sold in his stock in company A?

A) 60   B) 30   C) 50   D) 80
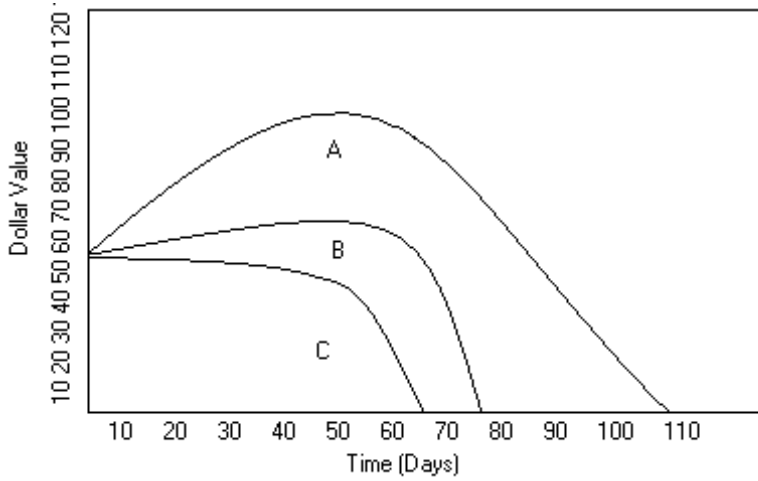
5)

Mike decides to buy shares of companies A, B, and C, which were initially selling for the same price. The changes in each stock's value are shown in the graph above. After how many days did stock C's value go below $20?

A) 40   B) 80   C) 60   D) 30

2

6)

Mike decides to buy shares of companies X and Y, which were initially selling for the same price. The changes in each stock's value over 90 days are shown in the graph above. Using the trend of the graph at 90 days, do you expect the value of Stock X to increase or decrease over the upcoming days?

A) Increase   B) Decrease
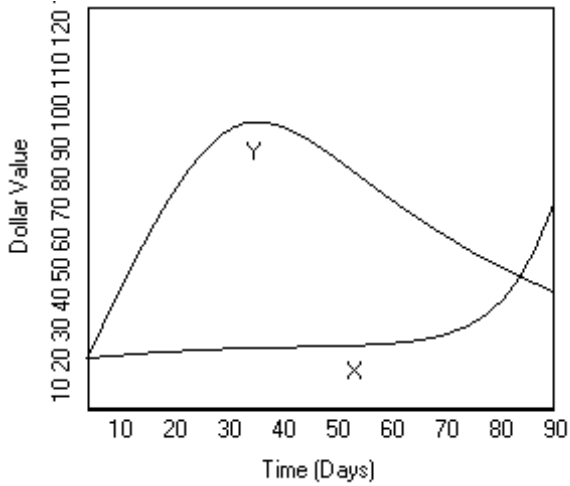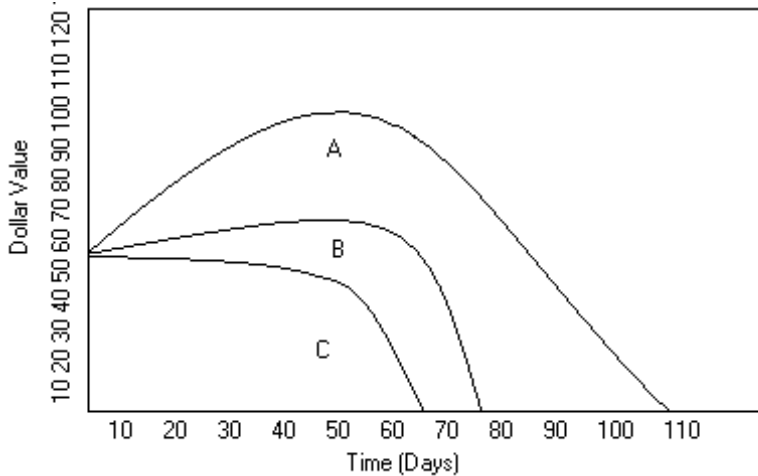
7)

Mike decides to buy shares of companies A, B, and C, which were initially selling for the same price. The changes in each stock's value are shown in the graph above. Could Mike have ever made a profit off of stock C if he had sold at the right time?

A) Yes   B) No

A company installs 5,000 light bulbs. The lifetimes of the lightbulbs are approximately normally distributed with a mean of 500 hours and a standard deviation of 100 hours. Find the approximate number of bulbs that can be expected to last the indicated amount of time.

8) More than 400 hours   8) _____

    A) 2,207   B) 4,219   C) 4,195   D) 4,205

9) Less than 690 hours   9) _____

    A) 4,860   B) 4,853   C) 2,357   D) 4,855

10) Between 500 hours and 675 hours   10) _____

    A) 2,256   B) 4,800   C) 2,300   D) 4,700

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

11) Explain in your own words the difference between a bar graph and a histogram. Give an example of data for which you might use a histogram and an example of data for which you might use a bar graph.

11) _____

12) The median of a data set is always/sometimes/never (select one) one of the data points in a set of data. Explain your answer with brief examples.

12) _____

13) Suppose that you want to construct a pie chart to represent the following data.

13) _____

Blood Type	Frequency
O	90
A	84
B	18
AB	8

Explain how you would calculate the angle for the sector corresponding to the blood type O.

14) Suppose that a state introduces a state income tax which will be at a flat rate of 3%. The state legislature wishes to estimate how much money they will receive in taxes, and to do this they need to know the average income of residents of the state. Which information would be most useful, the mean income, the median income, or the mode of the incomes? Why?

14) _____

15) Roughly speaking, the standard deviation indicates how far, on average, the observations are from the mean. Do you think that for the data set below the standard deviation will give a good indication of the typical deviation from the mean?

15) _____

2, 3, 4, 4, 5, 5, 6, 6, 100

What drawback of the standard deviation is illustrated by this example?

16) Suppose that a data set has a left-skewed distribution. Which do you think will be larger, the mean or the mode? Explain your thinking.

16) _____

17) Suppose that a data set has a mean of 100 and a standard deviation of 5. If a positive number k is added to every item of the data set, how will this affect the mean and the standard deviation?

17) _____

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

18) If the mean and median are equal for the set $\{4, 8, x\}$, what can you say about the value of x?
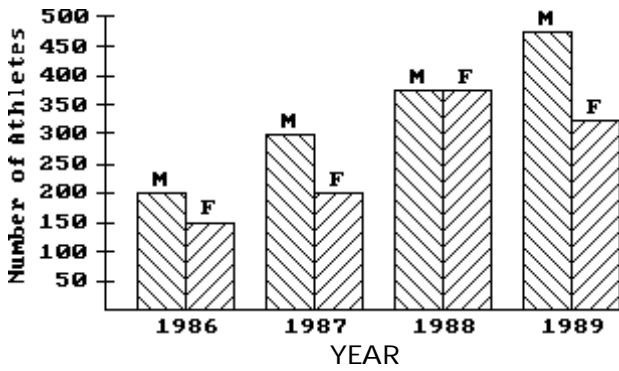
18) _____

   A) x = 1, x = 6, or x = 11   B) Not possible

   C) x = 0, x = 6, or x = 12   D) x = 6

This double-bar graph shows the number of male (M) and female (F) athletes at a university over a four-year period. Answer the question.

19) What percentage of all students involved in athletics in 1986 was female? (Round to the nearest percent.)   19) _____

    A) 43%   B) 14%   C) 57%   D) 75%

20) What is the only year in which the number of female athletes declined from its previous value?   20) _____

    A) 1988   B) 1986   C) 1989   D) 1987

21) Which year had the greatest number of male athletes?   21) _____

    A) 1988   B) 1986   C) 1989   D) 1987

22) Which year had the smallest number of male athletes?   22) _____

    A) 1988   B) 1989   C) 1987   D) 1986

Find the equation of the least squares line for the given data. Round the final values to the nearest hundredth unless otherwise specified.

23) Ten students in a graduate program were randomly selected. Their grade point averages (GPAs) when they   23) _____
entered the program were between 3.5 and 4.0. The following values were obtained for their GPAs on
entering the program and their current GPAs. Find the equation of the least squares line. Round values to
three significant digits.

Entering GPA (x)	Current GPA (y)
3.5	3.6
3.8	3.7
3.6	3.9
3.6	3.6
3.5	3.9
3.9	3.8
4.0	3.7
3.9	3.9
3.5	3.8
3.7	4.0

    A) y' = 4.91 + 0.0212x   B) y' = 2.51 + 0.329x   C) y' = 3.67 + 0.0313x   D) y' = 5.81 + 0.497x

24) Managers rate employees according to job performance and attitude. The results for several randomly selected employees are given below.

24) _____

Attitude (x)	59	63	65	69	58	77	76	69	70	64
Performance (y)	72	67	78	82	75	87	92	83	87	78

    A) y' = 11.66 + 1.02x   B) y' = 92.3 - 0.669x   C) y' = -47.3 + 2.02x   D) y' = 2.81 + 1.35x

25)

25) _____

x	1	2	3	4	5	6
y	17	20	19	22	21	24

    A) y' = 1.17x + 18.9   B) y' = 1.17x + 16.4   C) y' = 1.03x + 16.4   D) y' = 1.03x + 18.9

26)

26) _____

x	10	20	30	40	50
y	3.9	4.6	5.4	6.9	8.3

    A) y' = 0.11x + 2.49   B) y' = 0.17x + 2.11   C) y' = x - 8   D) y' = 0.5x - 2

Find the indicated probability or percentage for the normally distributed variable.

27) The volumes of soda in quart soda bottles are normally distributed with a mean of 32.3 oz and a standard deviation of 1.2 oz. What is the probability that the volume of soda in a randomly selected bottle will be less than 32 oz?

27) _____

    A) 0.599   B) 0.382   C) 0.099   D) 0.401

28) At a local college, times for running the mile are approximately normally distributed with a mean of 4.5 minutes, and a standard deviation of 0.3 minutes. What is the probability that a randomly selected time will be less than 4 minutes?

28) _____

    A) 0.047   B) 0.227   C) 0.953   D) 0.274

29) The monthly incomes of trainees at a local mill are normally distributed with a mean of $1100 and a standard deviation of $150.
Find the probability that a randomly selected trainee earns less than $900 a month.

29) _____

   A) 0.159   B) 0.092   C) 0.081   D) 0.184

30) The mean clotting time of blood is 7.35 seconds, with a standard deviation of 0.35 seconds. The times are approximately normally distributed. What is the probability that a randomly selected blood clotting time will be less than 7 seconds?

30) _____

    A) 0.159   B) 0.363   C) 0.156   D) 0.841

Answer the question.

31) The bar graph below shows the number of students by major in the College of Arts and Sciences.   31) _____
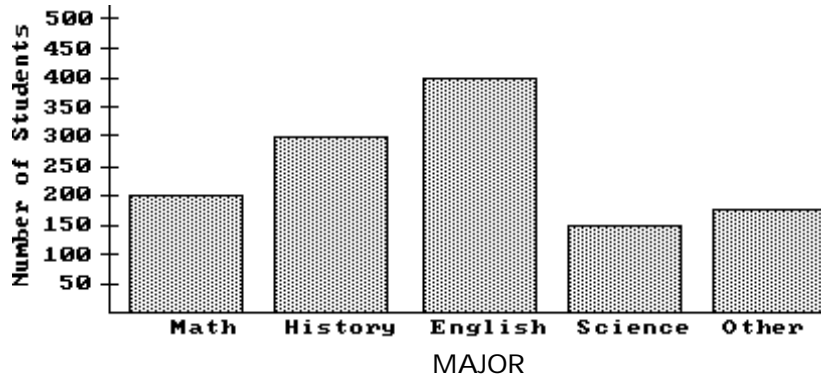
MAJOR
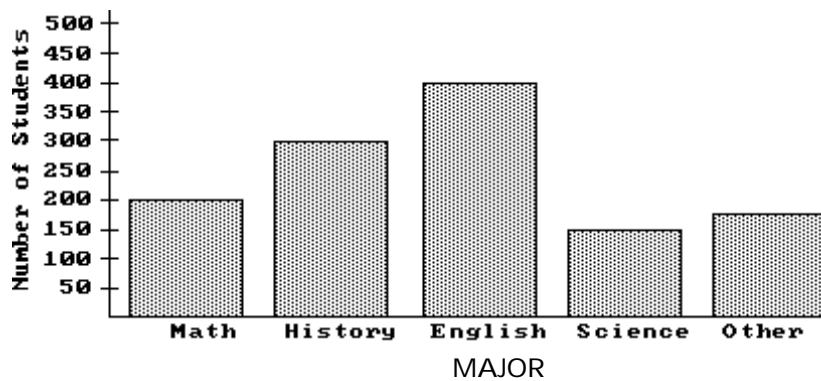
Are more students majoring in 'Arts' or in 'Sciences'?

A) Arts   B) Sciences

32) The bar graph below shows the number of students by major in the College of Arts and Sciences.   32) _____

MAJOR

Did twice as many students major in Math as in Science?

A) Yes   B) No

Find the indicated decile or percentile.

33) The test scores of 19 students are listed below. Find the sixth decile, D_6.   33) _____

36 45 49 53 55
56 59 61 62 65
66 71 76 81 83
88 89 94 97

A) 71   B) 65   C) 76   D) 66

34) The weights (in pounds) of 18 randomly selected adults are given below. Find the fourth decile, D_4.   34) _____

120 165 187 143 119 132
127 156 179 159 180 202
114 146 151 168 173 144

A) 143   B) 145   C) 146   D) 144

7

35) The test scores of 15 students are listed below. Find the third decile, D_3 .

```
41  48  53  57  60
63  67  68  74  76
85  87  90  94  95
```

   A) 56.5   B) 60   C) 57   D) 63

Construct a stem and leaf display for given data.

36) Here are the final scores for the last 16 games played by the local basketball team.

36) _____

```
45 54 53 65
67 75 57 59
87 86 79 74
67 75 87 65
```

A)
```
4│45
5│53 54 57 59
6│65 67
7│74 75 79
8│86 87
```

B)
```
4│5
5│3 4 7 9
6│5 7
7│4 5 9
8│6 7
```

C)
```
4│45
5│53 54 57 59
6│65 65 67 67
7│74 75 75 79
8│86 86 87
```

D)
```
4│5
5│3 4 7 9
6│5 5 7 7
7│4 5 5 9
8│6 7 7
```

37) Mr. Johnson wants to display his employees' ages in a graph. Below are their ages.

37) _____

```
23 36 45
42 34 53
34 27 24
```

A)
```
2│3 4 7
3│4 6
4│2 4
5│3
```

B)
```
2│23 24 27
3│34 34 36
4│42 44
5│43
```

C)
```
2│23 24 27
3│34 36
4│42 44
5│43
```

D)
```
2│3 4 7
3│4 4 6
4│2 5
5│3
```

38) The numbers below represent the commute times (in minutes) for a group of college students.

38) _____

```
11  16  12  16  13  25  26  35   2  12
23  12  16  34  21   4   7  24  23  34
```

A)
```
0│2 4 7
1│1 2 3 6
2│1 3 4 5 6
3│4 5
```

B)
```
0│2 4 7
1│1 2 2 2 3 6 6 6
2│1 3 3 4 5 6
3│4 4 5
```

C)
```
0│2 4 7
1│11 12 13 16
2│21 23 24 25 26
3│34 35
```

D)
```
0│2 4 7
1│11 12 12 12 13 16 16 16
2│21 23 23 24 25 26 26
3│34 34 35
```

True or false?

39) For any data set the midrange, $\dfrac{\text{minimum value} + \text{maximum value}}{2}$, is equal to the median.

39) _____

   A) True   B) False

40) A person who scored at the sixtieth percentile in a test scored higher than 300 people if 500 people took the test. 40) _____

    A) True   B) False

41) A person who scored at the eightieth percentile in a test answered eighty percent of the questions correctly. 41) _____

    A) True   B) False

42) Using only a box plot, it is possible to determine the mean value of a data set. 42) _____

    A) True   B) False

Find the area under the normal curve for the condition.

43) Find the percent of the total area under the curve between $z = 1.41$ and $z = 2.83$. 43) _____

    A) 7.85%   B) 7.7%   C) 7.8%   D) 7.9%

44) Find the percent of the total area under the curve between $z = -2.49$ and $z = 1.19$. 44) _____

    A) 86.8%   B) 87.7%   C) 11.3%   D) 11.1%

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the problem.

45) A local newspaper ran a survey by asking, "Do you support the deployment of a weapon that could kill millions of innocent people?" What was wrong with the survey question? 45) _____

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

46) At Loop Junior College, the mean grade point average (gpa) of the current student body is 2.76 with a standard deviation of 0.64. Compute the gpa's of each student to two decimal places. 46) _____
A gpa with a z-score of 0.6.
A gpa with a z-score of -0.2.

    A) 3.40, 2.12   B) 3.14, 2.63   C) 2.16, 2.96   D) 3.14, 2.56

47) A radio station claims that the amount of advertising per hour of broadcast time has an average of 13 minutes and a standard deviation equal to 2.6 minutes. You listen to the radio station for 1 hour, at a randomly selected time, and carefully observe that the amount of advertising time is equal to 7 minutes. Calculate the z-score for this amount of advertising time. 47) _____

    A) -15.6   B) 0.34   C) 2.31   D) -2.31

48) Scores on a test are approximately normally distributed with a mean of 70 and a standard deviation of 9. The teacher wants to give A's to the top 10% of students, B's to the next 25%, C's to the next 40%, D's to the next 16%, and F's to the bottom 9%. What is the bottom cutoff for a D grade? Round your answer to the nearest whole number. 48) _____

    A) 65   B) 56   C) 58   D) 62

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

49) "38% of adults in the United States regularly visit a doctor". This conclusion was reached by a college student after she had questioned 520 randomly selected members of her college. What was wrong with her survey? 49) _____

50) You plan to make a survey of 200 people. The plan is to talk to every 10th person coming out of the school library. Is there a problem with your plan?

50) _____

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

51) Elizabeth and Angela skate for their college speed-skating team. In the last race, Elizabeth skated the 500-meter race in 60 seconds. The average for this race is 65 seconds with a standard deviation of 4.0 seconds. Angela skated the 1000-meter race in 132 seconds. The average for this race is 140 seconds with a standard deviation of 10.0 seconds. Find the z-score for each skater. Relatively speaking, which skater had the faster time?

51) _____

  A) -1.2, -0.8, Elizabeth
  B) -5.0, -8.0, Angela
  C) -1.2, -0.8, Angela
  D) -5.0, -8.0, Elizabeth

52) Sheryl's mean score on eight exams is 83.500. Find the sum of her scores.

52) _____

  A) 668
  B) 684
  C) 768
  D) 691

53) At Loop College, the mean grade point average (gpa) of the current student body is 2.76 with a standard deviation of 0.64. Find the gpa of a student whose z-score is -2.4. Round to the nearest hundredth.

53) _____

  A) 5.16
  B) 1.22
  C) 0.36
  D) 2.12

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

54) A researcher wished to gauge public opinion on gun control. He randomly selected 1000 people from among registered voters and asked them the following question: "Do you believe that gun control laws which restrict the ability of Americans to protect their families should be eliminated?". What was wrong with this poll?

54) _____

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

55) At Loop College, the mean grade point average (gpa) of the current student body is 2.76 with a standard deviation of 0.64. Find the gpa of a student whose z-score is 1.4.   Round to the nearest hundredth.

55) _____

  A) 3.66
  B) 2.85
  C) 3.40
  D) 1.36

Find the standard deviation. Round to one more place than the data.

56) 19, 14, 17, 6, 5, 14, 14, 16, 15

56) _____

  A) 4.7
  B) 1.7
  C) 4.5
  D) 5.1

Classify the random variable as either discrete or continuous.

57) The number of oil spills occurring off the Alaskan coast

57) _____

  A) Discrete
  B) Continuous

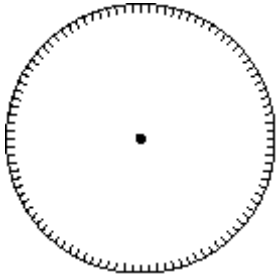58) The number of freshmen in the required course, English 101

58) _____

  A) Continuous
  B) Discrete

Use the information to complete a circle graph. Note that the circle is divided into 100 equal sections.

59) Main form of exercise for employees of one company: 59) _____

None:	28%
Walking:	19%
Running:	6%
Golf:	11%
Weight Training:	25%
Other:	11%

A)

B)

C)

D)

60) Main form of exercise for employees of one company:

None:	27%
Walking:	16%
Running:	7%
Golf:	12%
Weight Training:	23%
Other:	15%

60) _____

A)

Other 15% | None 27%
Weight Training 23% | Walking 16%
Golf 12% | Running 7%

B)

Other 15% | None 27%
Weight Training 23% | Walking 16%
Golf 12%
Running 7%

C)

Weight Training 23%
Other 15% | None 27%
Golf 12% | Walking 16%
Running 7%

D)

Other 15% | None 27%
Weight Training 23% | Walking 16%
Golf 12%
Running 7%
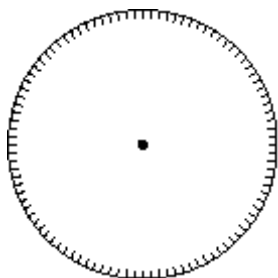
Find the median for the given sample data.

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

61) _____

63, 34, 206, 184, 259, 245, 232

Find the median number of newspapers sold.

A) 184 newspapers   B) 206 newspapers   C) 175 newspapers   D) 232 newspapers

12

Find the mean for the given sample data. Unless otherwise specified, round your answer to one more decimal place than that used for the observations.

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

62) _____

```
55   61   65
52   60   58
59   54   56
```

A) 57.1   B) 58.0   C) 57.8   D) 56.5

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

63) _____

```
575 501 344 356 497
349 343 607 470 482
```

A) 461.6   B) 476.0   C) 452.4   D) 443.5

64) The table below gives the total spectator attendance for various U.S. sports in 1997.

64) _____

Sport	Attendance (millions)
Pro Baseball	64.9
College Basketball (Men's)	27.7
College Basketball (Women's)	6.7
Pro Basketball (Men's)	21.7
College Football	36.9
Pro Football	14.8
Pro Hockey	17.1

Find the midrange of these attendance numbers.

A) 23.8000008 million   B) 22.9000008 million

C) 35.8 million   D) 35.8 million

65) The grocery expenses for six families were $77.09, $76.90, $53.00, $65.69, $51.95, and $84.23. Compute the mean grocery bill. Round your answer to the nearest cent.

65) _____

A) $68.14   B) $81.77   C) $102.22   D) $69.77

Find the range for the set of data given.

66)   119   522   167   636   447   268

66) _____

A) 101   B) 517   C) 522   D) 119

67)

67) _____

Value	Frequency
13	2
21	5
25	4
28	3
36	3

A) 23   B) 22   C) 49   D) 24

Use the standard normal curve table to find the closest z-score for the given condition.

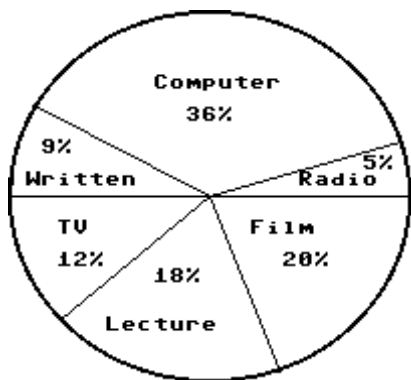68) 25.1% of the total area is to the right of z.

68) _____

A) -0.68   B) 0.33   C) -0.67   D) 0.67

69) 82.9% of the total area is to the left of z.   69) _____

    A) 0.95   B) -0.95   C) -0.96   D) 0.96

In a school survey, students showed these preferences for instructional materials. Answer the question.

70) How many degrees are in the central angle for the "Lecture" sector?   70) _____

    A) 64.8°   B) 18°   C) 32.4°   D) 20°

71) How many degrees are in the central angle for the "radio" sector?   71) _____

    A) 5°   B) 9°   C) 180°   D) 18°

72) About how many students would you expect to prefer radio in a school of 450 students?   72) _____

    A) About 81 students   B) About 23 students

    C) About 162 students   D) About 5 students

73) About how many students would you expect to prefer computers in a school of 450 students?   73) _____

    A) About 90 students   B) About 162 students

    C) About 36 students   D) About 81 students

74) About how many students would you expect to prefer written materials in a school of 350 students?   74) _____

    A) About 63 students   B) About 32 students

    C) About 126 students   D) About 9 students

Find the standard deviation for the given data. Round your final answer to one more decimal place than that used for the observations.

75) The fluctuation in power (in W) in a microlamp: 75) _____
    60.05, 60.00, 59.69, 60.15, 60.15

    A) 0.434 W   B) 0.036 W   C) 0.189 W   D) 0.379 W

76) Christine is currently taking college astronomy. The instructor often gives quizzes. On the past seven   76) _____
    quizzes, Christine got the following scores.

    52   13   225 27   19   55   55

    A) 73.3   B) 225   C) 60,638   D) 28,416.6

Find the mean of the set of data.

77) 12, 8, 5, 7, 13   77) _____

    A) 9   B) 11.25   C) 46   D) 10

78) 7.67, 18.08, 8.32, 4.52, 4.29, 13.90, 18.14, 16.43   78) _____
    Round your answer to two decimal places.

    A) 11.42   B) 7.10   C) 12.05   D) 10.15

79) 11, 10, 1, 18, 5, 5, 4, 10   79) _____

    A) 9.14   B) 7   C) 21   D) 8

Use this graph to answer the question.
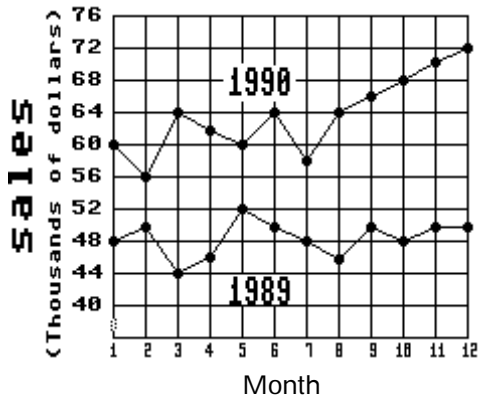
Big "D" Sales
1989, 1990

80) Which month in 1990 had the highest sales?   80) _____

    A) Month 12   B) Month 3   C) Month 5   D) Month 6

81) What were the total sales for the first 6 months of 1989?   81) _____

    A) $46,000   B) $290,000   C) $240,000   D) $366,000

Use the given data to construct a frequency and relative frequency distribution.

82) A medical research team studied the ages of patients who had strokes caused by stress. The ages of 34 patients who suffered stress strokes were as follows.

82) _____

```
29 30 36 41 45 50 57 61 28 50 36 58
60 38 36 47 40 32 58 46 61 40 55 32
61 56 45 46 62 36 38 40 50 27
```

Construct a frequency and relative frequency distribution for these ages. Use 8 classes beginning with a lower class limit of 25.

A)

Age	Frequency	Relative Frequency
x	f	f/n
25-29	3	3/34 ≈ 9%
30-34	3	3/34 ≈ 9%
35-39	6	6/34 ≈ 18%
40-44	4	4/34 ≈ 12%
45-49	5	5/34 ≈ 15%
50-54	3	3/34 ≈ 9%
55-59	5	5/34 ≈ 15%
60-64	5	5/34 ≈ 15%

B)

Age	Frequency	Relative Frequency
x	f	f/n
25-29	3	3/100 = 3%
30-34	3	3/100 = 3%
35-39	6	6/100 = 6%
40-44	4	4/100 = 4%
45-49	5	5/100 = 5%
50-54	3	3/100 = 3%
55-59	5	5/100 = 5%
60-64	5	5/100 = 5%

C)

Age	Frequency	Relative Frequency
x	f	f/n
25-29	3	3/34 ≈ 9%
30-34	3	3/34 ≈ 9%
35-39	7	7/34 ≈ 21%
40-44	4	4/34 ≈ 12%
45-49	4	4/34 ≈ 12%
50-54	3	3/34 ≈ 9%
55-59	5	5/34 ≈ 15%
60-64	5	5/34 ≈ 15%

D)

Age	Frequency	Relative Frequency
x	f	f/n
25-30	4	4/34 ≈ 12%
30-35	3	3/34 ≈ 9%
35-40	6	6/34 ≈ 18%
40-45	4	4/34 ≈ 12%
45-50	5	5/34 ≈ 15%
50-55	3	3/34 ≈ 9%
55-60	5	5/34 ≈ 15%
60-65	5	5/34 ≈ 15%

Use the regression line to predict the value of y.

83)

x	0	3	4	5	12
y	8	2	6	9	12

83) _____

What is the predicted value of y when x = 15?

A) 12.8   B) 15.5   C) 12.5   D) 9.1

84) Nine pairs of data yield the regression equation $y' = 19.4 + 0.93x$. What is the best predicted value of y for x = 45?

84) _____
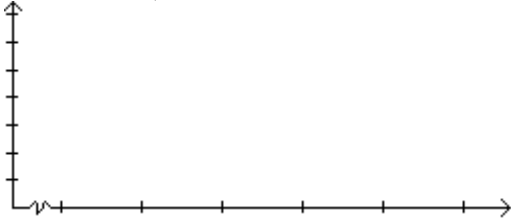
A) 64.7   B) 61.3   C) 79.6   D) 57.8
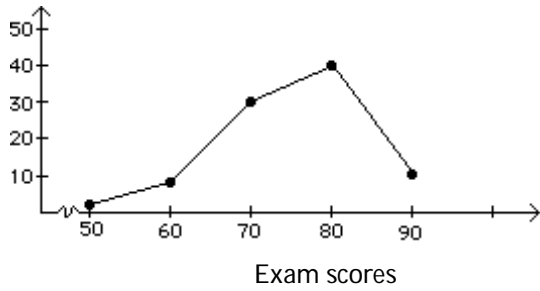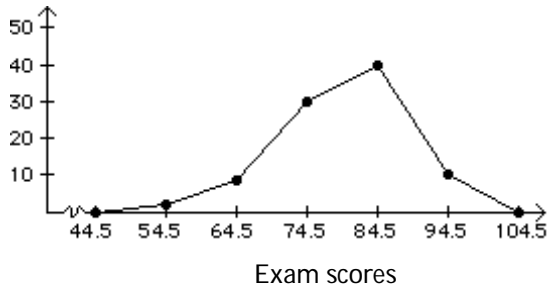
Construct a frequency polygon.

Exam scores	Number of Students
50-59	2
60-69	8
70-79	30
80-89	40
90-99	10

A) Frequency

Exam scores

B) Frequency

Exam scores

86)

Weight (in pounds)	Number of students
101–130	14
131–160	12
161–190	68
191–220	76
221–250	30

A) Frequency

Weight in pounds

B) Frequency

Weight in pounds
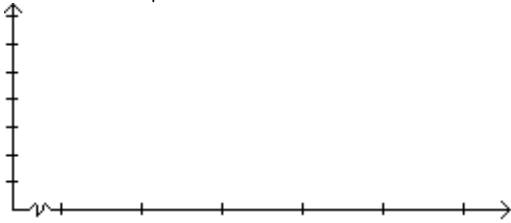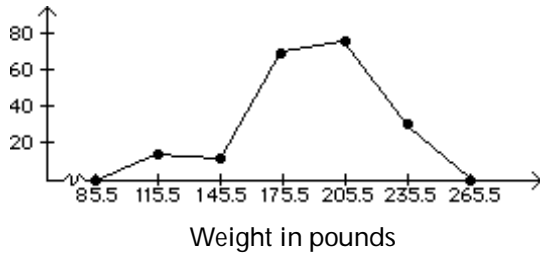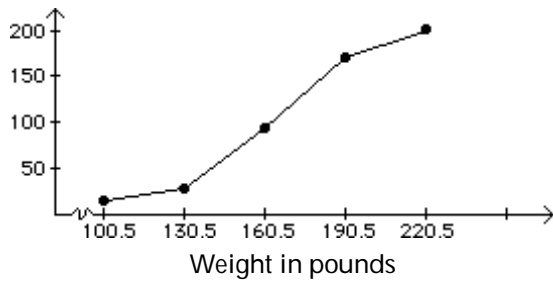
Find the mean for the given frequency distribution.

87)

Value	Frequency
165	2
182	6
254	4
292	7
327	1
402	1

A) 248.1   B) 274.3   C) 77.2   D) 254.3

Find the median.

88) 3, 5, 19, 24, 38, 38, 45

A) 19   B) 38   C) 25   D) 24

89) 7, 4, 26, 14, 47, 45, 33

A) 14   B) 33   C) 25   D) 26

90)

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) 3.50 B) 2.94 C) 3.45 D) 3.40

Find the correlation coefficient for the given data.

91) Two separate tests are designed to measure a student's ability to solve problems. Several students are randomly selected to take both tests and the results are shown below.

Test A	48	52	58	44	43	43	40	51	59
Test B	73	67	73	59	58	56	58	64	74

A) 0.867 B) 0.714 C) 0.109 D) 0.548

92) Two different tests are designed to measure employee productivity and dexterity. Several employees are randomly selected and tested with these results.

Productivity	23	25	28	21	21	25	26	30	34	36
Dexterity	49	53	59	42	47	53	55	63	67	75

A) 0.115 B) 0.986 C) -0.280 D) 0.471

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Make a bar graph to represent the data.

93) The following table shows the number of female infants born at Hospital X on New Year's Day (Jan. 1). Create a vertical bar graph.

Year	No. of Female Infants Born Jan 1
1970	21
1971	12
1972	18
1973	30
1974	27
1975	24

94) The table lists the winners of the Wimbledon women's singles title for the years 1976-1995. Construct a vertical bar graph for the given relative frequencies.

Winner	Frequency	Relative frequency
C. Evert	2	0.10
V. Wade	1	0.05
M. Navratilova	9	0.45
C. Martinez	1	0.05
S. Graf	6	0.30
E. Goolagong	1	0.05
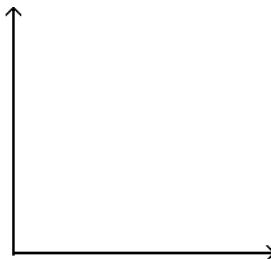
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

At one high school, the mean time for running the 100-yard dash is 15.2 seconds with a standard deviation of 0.9 seconds. The times are very closely approximated by a normal curve. Find the percent of times that are:

95) Greater than 16.1 seconds 95) _____

    A) 16%   B) 15.5%   C) 2%   D) 13.5%

96) Less than 17 seconds 96) _____

    A) 98%   B) 84%   C) 97.7%   D) 2.5%

97) Greater than 13.4 seconds 97) _____

    A) 97.7%   B) 2.5%   C) 84%   D) 98%

98) Between 17 and 17.9 seconds 98) _____

    A) 16%   B) 2%   C) 13.5%   D) .5%

Find the indicated probability.

99) The table shows the percentage of college students who prefer a given pizza topping. 99) _____

toppings	freshman	sophomore	junior	senior
cheese	5.19	7.55	11.79	10.38
meat	9.43	10.38	7.55	5.19
veggie	7.55	5.19	9.43	10.38

What is the probability that a randomly selected student prefers cheese toppings? Round to the nearest hundredth.

    A) 0.30   B) 0.35   C) 0.33   D) 0.10

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Construct the specified histogram.

100) In a survey, 20 voters were asked their age. The results are summarized in the frequency table below. Construct a histogram . 100) _____

Age of voters	Number of voters
20-29	5
30-39	5
40-49	6
50-59	0
60-69	4