

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. Find the value for the correlation coefficient  $r$ .

$x$	10	8	7	12	14	5
$y$	20	19	17	25	28	9

- A) 0.763   B) 0.874   C) 0.551   D) 0.986
2. The area under a normal distribution curve that lies within one standard deviation of the mean is approximately \_\_\_\_\_.  
A) 95%   B) 99.7%   C) 68%   D) 65%
3. A data set of size 19 has correlation coefficient of  $r = -0.432$ . Test the significance of  $r$  at the 5% level and at the 1% level.  
A)  $r$  is significant at 5% and at 1%.      C)  $r$  is not significant at 5% or at 1%.  
B)  $r$  is significant at 5%, but not at 1%.
4. For the 20 test scores shown, find the percentile rank for a score of 86.  
75 63 92 74 86 50 77 82 98 65 71 89 75 66 87 59 70 83  
91 73  
A) 75th percentile   B) 30th percentile   C) 80th percentile   D) 70th percentile
5. The average amount customers at a certain grocery store spend yearly is \$636.55. Assume the variable is normally distributed. If the standard deviation is \$89.46, find the probability that a randomly selected customer spends between \$550.67 and \$836.94.  
A)  $0.144 = 14.4%$    B)  $0.820 = 82.0%$    C)  $0.156 = 15.6%$    D)  $0.943 = 94.3%$
6. Determine whether a correlation coefficient of  $r = -0.405$  is significant at the 5% level for a sample size of 22.  
A)  $r$  is not significant at 5%.   B)  $r$  is significant at 5%.



13. To select a \_\_\_\_\_ sample, an intact group of subjects that represent the population is selected.

A) stratified B) random C) cluster D) systematic

14. Find the area under the normal distribution curve to the right of  $z = -3.24$ .

A) 0.499 B)  $-0.499$  C) 0.999 D) 0.001

15. Find the equation of the regression line.

$x$	12	14	10	9	15	8
$y$	29	35	28	23	36	18

A)  $y = -1.2 + 2.4x$  B)  $y = 1.2 + 2.4x$  C)  $y = 2.4 + 1.2x$  D)  $y = -2.4 + 1.2x$

16. Find the equation of the regression line.

$x$	21	14	18	23
$y$	9	1	5	11

17. The exam grades of 31 students were used to obtain the frequency distribution below. Construct a histogram and frequency polygon for the data.

<u>Class</u>	<u>Frequency</u>
40-49	1
50-59	2
60-69	5
70-79	12
80-89	7
90-99	4

18. Fifty people participated in a poll to determine their favorite ice cream flavor. Use the data to construct a bar graph.

<u>Flavor</u>	<u>Number</u>
Chocolate	15
Strawberry	8
Vanilla	13
Other	14

19. The exam grades of 31 students were used to obtain the frequency distribution below. Construct a frequency polygon for the data.

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20. Find  $Q_1$ ,  $Q_2$ , and  $Q_3$  for the ages of nine students.

18 20 21 19 17 36 22 19 24

21. Draw a scatter plot for the data shown.

$x$	2	7	3	4	5	1	6
$y$	6	1	5	3	6	12	2

22. These data represent the number of gas stations along a certain 50-mile length of desert road. Draw a time series graph for the data.

Year	1971	1972	1973	1974	1975
Number	3	4	4	6	5

23. Fifty 10-year-olds were monitored to determine the number of hours per week they spent watching television, surfing the net, and playing video games. The results were used to obtain the frequency distribution below. Construct a histogram and frequency polygon for the data.

Class	Frequency
0-4	2
5-9	7
10-14	7
15-19	15
20-24	10
25-29	5
30-34	3
35-39	1

24. Construct a bar graph for the number of stray animals in a certain city.

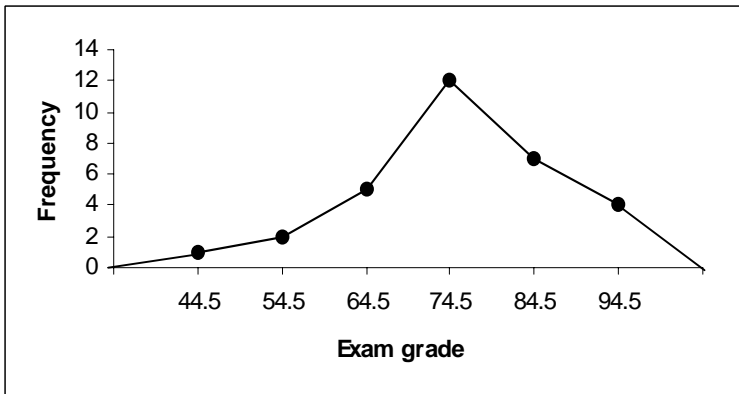
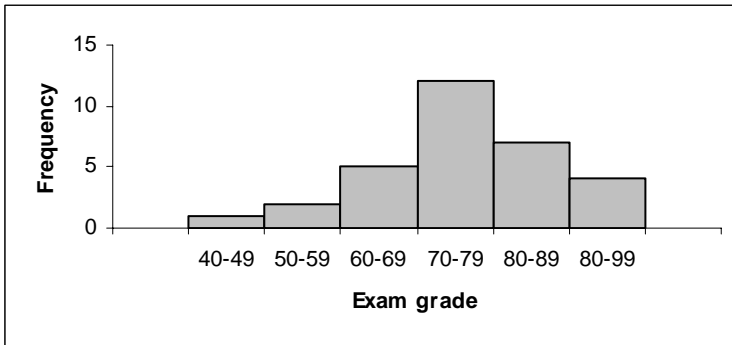
Animal	Number of strays
Cats	723
Dogs	576
Rabbits	328
Lizards	491

25. Find the median.

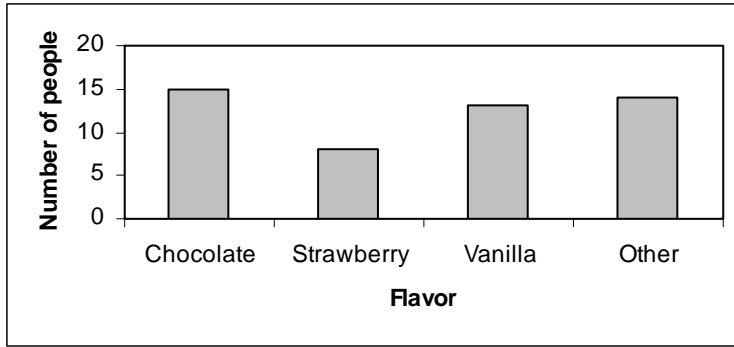
29 14 23 21 21 43 15

**Answer Key**

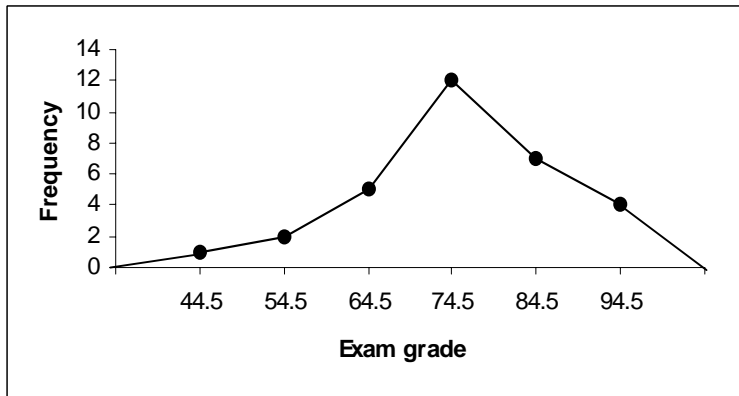
1. D
2. C
3. C
4. D
5. B
6. A
7. B
8. A
9. C
10. B
11. A
12. C
13. C
14. C
15. B
16.  $y = -15.0 + 1.1x$
- 17.



18.

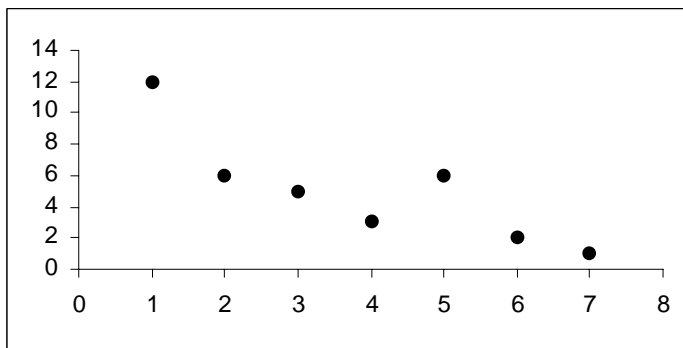


19.

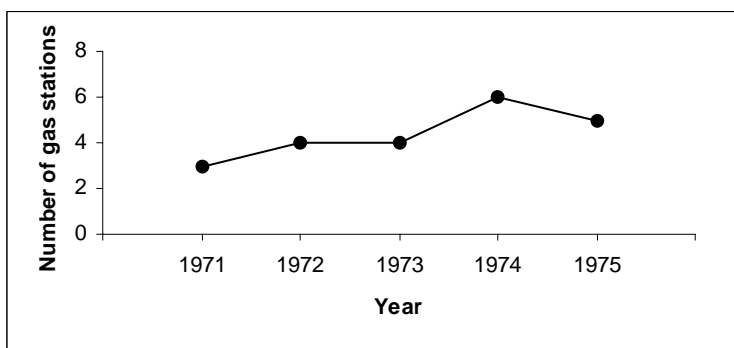


20.  $Q_1 = 18.5, Q_2 = 20, Q_3 = 23$

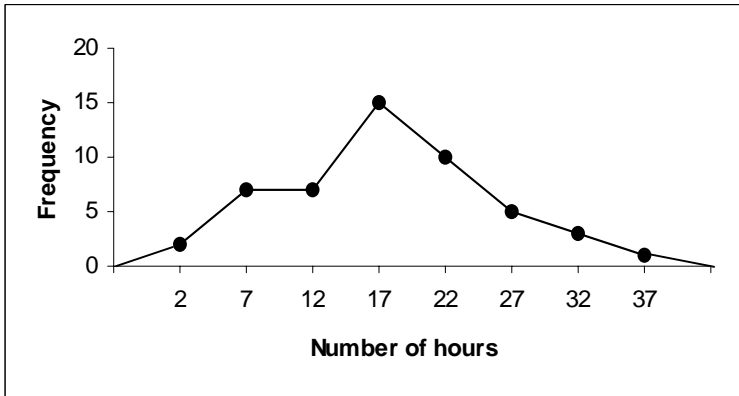
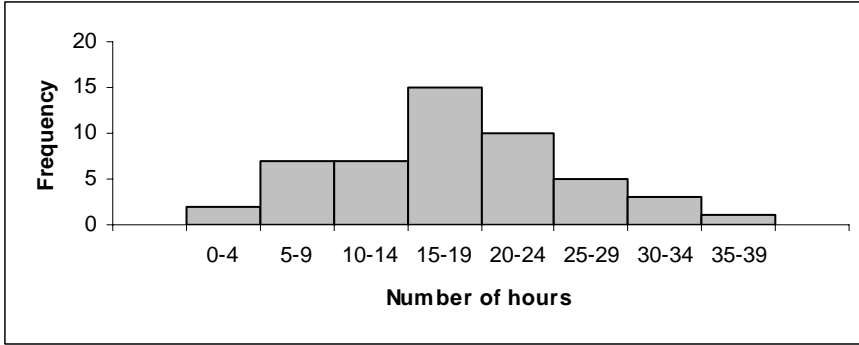
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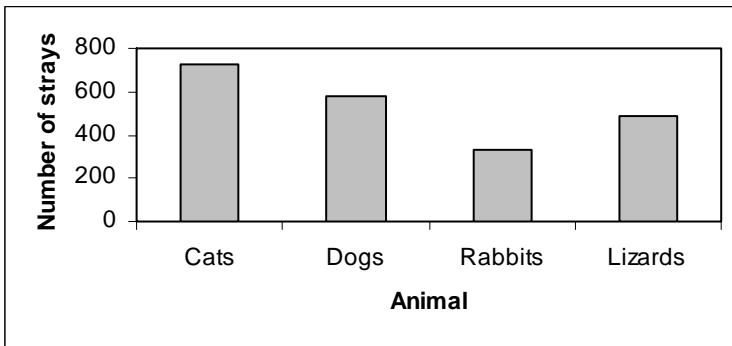
22.



23.



24.



25. 21