

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

1. Find the area under the normal distribution curve to the right of  $z = -1.03$ .

- A) 0.151   B)  $-0.349$    C) 0.349   D) 0.849

2. Use a scatter plot to determine the relationship between the  $x$  values and the  $y$  values.

$x$	7	2	4	5	1	6	3
$y$	5	26	20	15	30	12	25

- A) Negative linear relationship                      C) No relationship  
 B) Nonlinear relationship                              D) Positive linear relationship

3. Which statement is true for a statistical study?

- A) The sample is a subset of the population.  
 B) The population is a subset of the sample.

4. Find the median.

2   27   38   55   49   9   53   34

- A) 38   B) 36   C) 33.375   D) 34

5. The average hourly wage of employees of a certain company is \$9.83. Assume the variable is normally distributed. If the standard deviation is \$4.58, find the probability that a randomly selected employee earns less than \$5.43.

- A)  $0.313 = 31.3\%$    B)  $0.332 = 33.2\%$    C)  $0.436 = 43.6\%$    D)  $0.345 = 34.5\%$

6. Which of the following is *not* a property of a normal distribution?

- A) It never touches the  $x$ -axis.                      C) The mean, median, and mode are equal.  
 B) It is continuous.                                      D) It is bimodal (i.e., it has two modes).

7. Kate scored in the 95th percentile rank on an exam. If 400 students took the exam, how many students scored lower than Kate?

A) 379 B) 381 C) 378 D) 380

8. Find the equation of the regression line.

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

A)  $y = 1.7 + 1.9x$  B)  $y = 1.9 + 1.7x$  C)  $y = 2.7 + 2.5x$  D)  $y = 2.5 + 2.7x$

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

$x$	5	1	4	2	3
$y$	2	4	9	1	10

A) 0.176 B) 0.100 C) 0.155 D) 0.046

10. Find the area under the normal distribution curve between  $z = -1.34$  and  $z = 2.12$ .

A) 0.893 B) 0.073 C) 0.410 D) 0.483

11. Find  $Q_1$ ,  $Q_2$ , and  $Q_3$  for the data set below.

5.4 2.0 6.8 3.1 2.9 4.7 2.1 5.0 1.9 3.4

A)  $Q_1 = 2.05$ ,  $Q_2 = 3.1$ ,  $Q_3 = 5.2$  C)  $Q_1 = 2.1$ ,  $Q_2 = 3.25$ ,  $Q_3 = 5.0$   
 B)  $Q_1 = 2.05$ ,  $Q_2 = 3.25$ ,  $Q_3 = 5.2$  D)  $Q_1 = 2.1$ ,  $Q_2 = 3.4$ ,  $Q_3 = 5.0$

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

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

13. Find the area under the normal distribution curve between  $z = 1.52$  and  $z = 2.43$ .

A) 0.929 B) 0.436 C) 0.493 D) 0.057

14. Fran's percentile rank on an exam in a class of 500 is 85. Kelly's class rank is 60. Who is ranked higher?

A) Kelly B) Fran

15. Use the equation of the regression line to predict  $y$  when  $x = 20$ .

$x$	5	8	6	10	12	9
$y$	18	20	15	25	30	25

A) 45.5 B) 50 C) 40 D) 48.5

16. Find the area under the normal distribution curve to the left of  $z = -3.00$ .

17. Find the range.

29 44 35 13 17 10 36 46

18. 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.

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

19. Define *statistics*.

20. The exam grades of 31 students were used to obtain the frequency distribution below. Construct a 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

21. Construct a pie chart for the following information.

<u>Eye color</u>	<u>Number</u>
Blue	513
Brown	892
Green	106
Hazel	327

22. 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

23. Draw a scatter plot and describe the relationship.

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

24. Construct a stem and leaf plot for the following data using whole numbers as stems and the decimals as leaves.

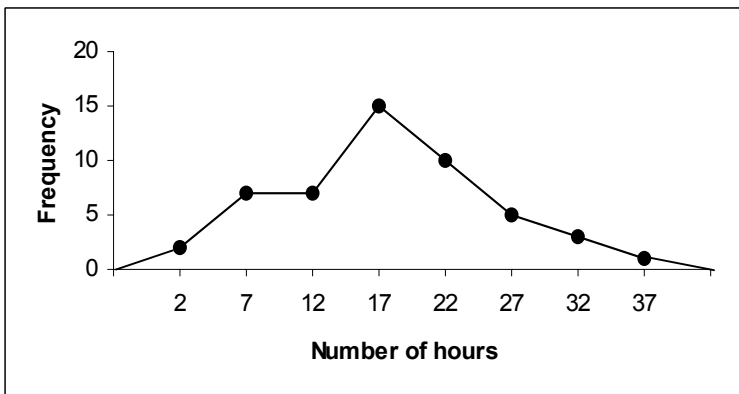
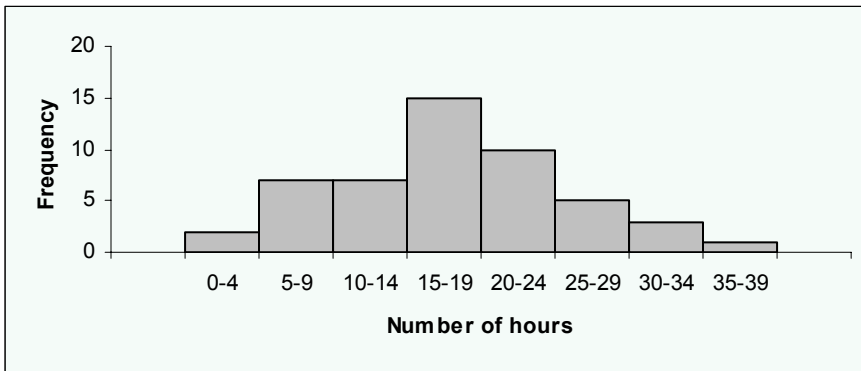
5.3	2.4	7.1	4.8	6.2
3.1	7.8	6.4	2.7	2.5
7.1	3.6	5.9	5.4	3.2
4.4	7.6	2.5		

25. For the 8 test scores shown, which score corresponds to a percentile rank of 25?

11 52 43 54 70 100 69 50

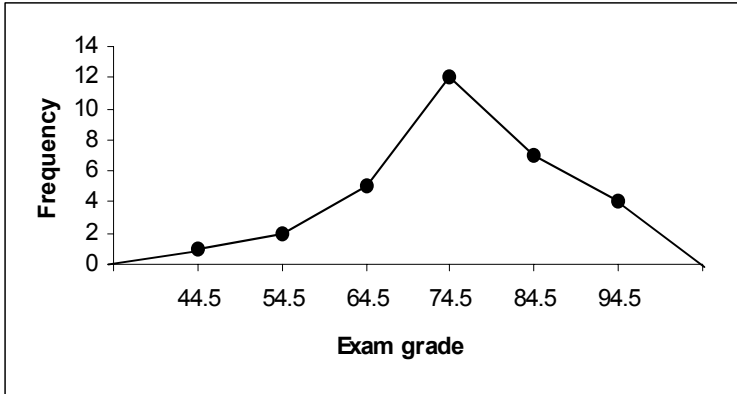
**Answer Key**

1. D
2. A
3. A
4. B
5. B
6. D
7. D
8. A
9. C
10. A
11. C
12. B
13. D
14. A
15. A
16. 0.001
17. 36
- 18.

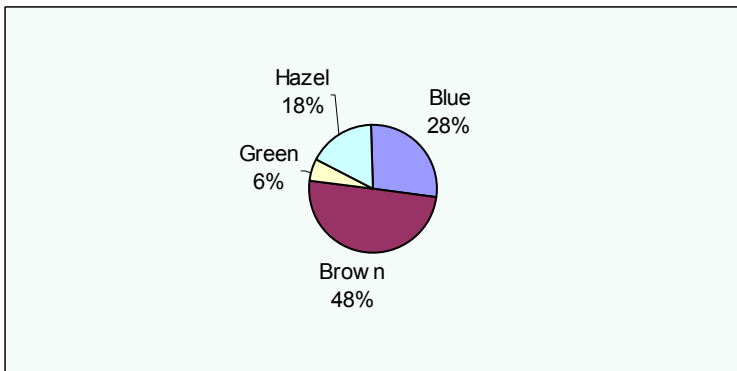


19. Statistics is the branch of mathematics that involves collecting, organizing, summarizing, and presenting data, and then drawing general conclusions from that data.

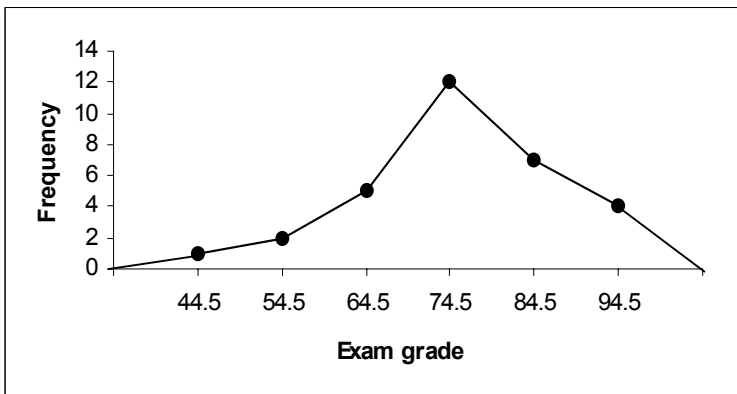
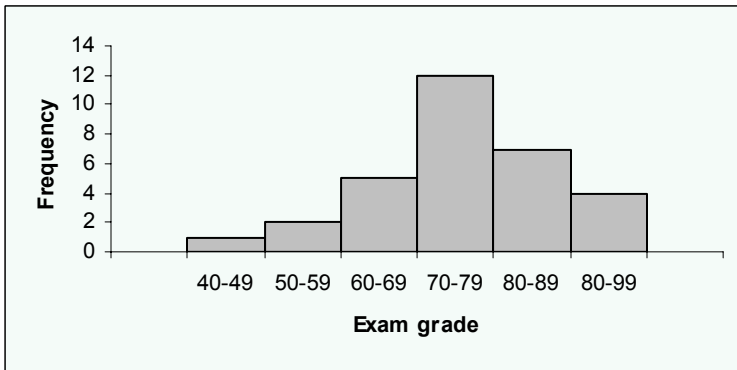
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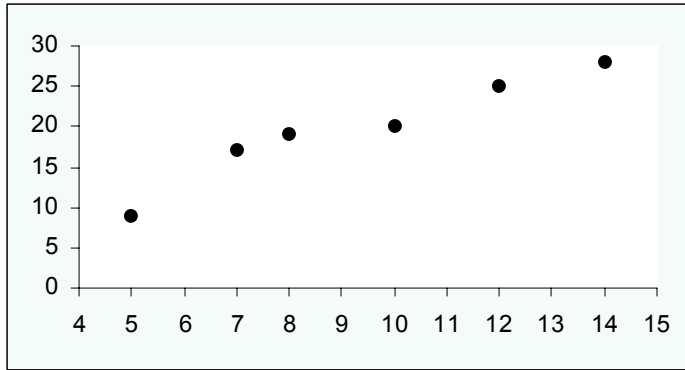
21.



22.



23.



A positive linear relationship exists.

24. **Stems**    **Leaves**  
 2            4 5 5 7  
 3            1 2 6  
 4            4 8  
 5            3 4 9  
 6            2 4  
 7            1 1 6 8
25. 50