

Competency 6 Statistics Pretest**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

Identify each sample. Then classify the sample as simple, stratified, systematic, convenience, or voluntary.

- _____ 1. The 30 students in a class are each assigned a number from 1 to 30. Then four of the 30 numbers are picked at random.
- | | |
|------------------------------|----------------------------|
| a. four students; simple | c. 30 students; systematic |
| b. four students; stratified | d. 4 students; systematic |
- _____ 2. A city is divided into 5 zip codes. Seven residents are chosen at random from each zip code.
- | | |
|-----------------------------|-----------------------------|
| a. 5 residents; simple | c. 35 residents; systematic |
| b. 35 residents; stratified | d. 35 residents; simple |

Find the mean. Round to the nearest tenth.

- _____ 3. {20, 21, 23, 26, 38, 39}
- | | |
|---------|---------|
| a. 27.8 | c. 22.9 |
| b. 26.3 | d. 32.7 |

Find the median. Round to the nearest tenth.

- _____ 4. {12, 28, 90, 12, 16, 10}
- | | |
|-------|-------|
| a. 19 | c. 10 |
| b. 14 | d. 12 |

Find the mean absolute deviation. Round to the nearest tenth.

- _____ 5. {2, 4, 6, 6, 8, 10}
- | | |
|--------|--------|
| a. 2 | c. 1.1 |
| b. 3.2 | d. 3.1 |

Find the variance. Round to the nearest tenth.

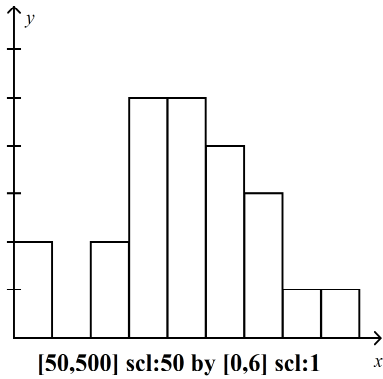
- _____ 6. {6, 7, 13, 17, 20, 20}
- | | |
|---------|---------|
| a. 35.6 | c. 30.2 |
| b. 32.5 | d. 31.6 |

The table shows the populations (in thousands) during a recent year for a sample of 25 cities.

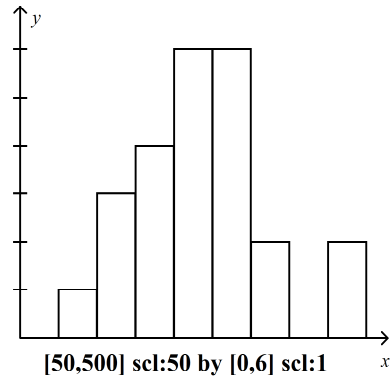
Population (Thousands)				
154	286	327	182	216
271	89	236	273	314
342	123	469	345	134
225	319	167	243	473
298	373	338	390	261

7. Construct a histogram.

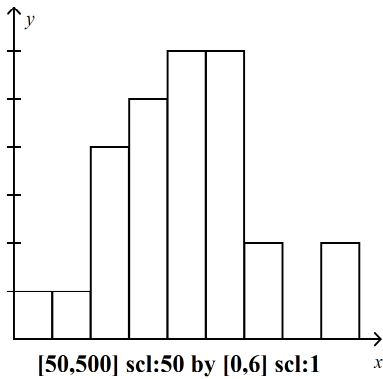
a.



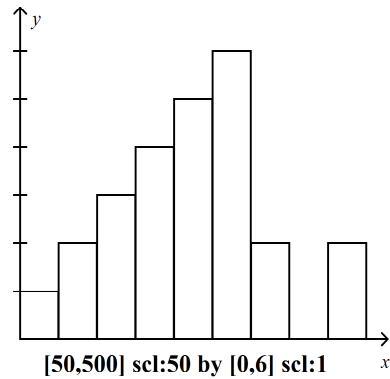
c.



b.



d.



The weights of 910 young deer tagged and weighed in a research study are normally distributed with a mean of 86 pounds and a standard deviation of 2.5 pounds.

8. Approximately how many deer weigh more than 91 pounds?

- a. 46 deer
- b. 24 deer
- c. 21 deer
- d. 23 deer

Name: _____

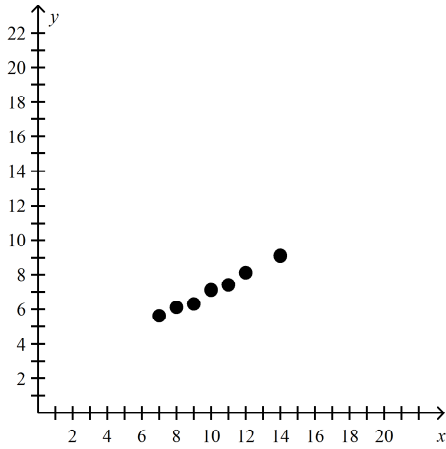
ID: A

- _____ 9. A film magazine reported that 23% of the film stars would be attending the marriage ceremony of a business tycoon. If 37 film stars are selected at random, find the probability that fewer than 6 of the film stars will be attending the business tycoons marriage ceremony.
- a. 14%
 - b. 15.5%
 - c. 13.1%
 - d. 11.9%

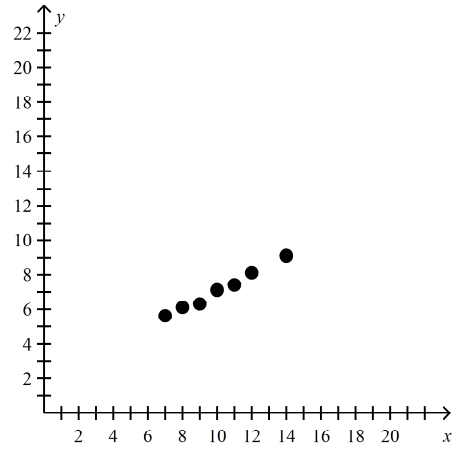
10. Construct a scatter plot that best represents the data in the table below. Then calculate the correlation coefficient.

x	y
7	5.6
8	6.1
9	6.3
10	7.1
11	7.4
12	8.1
14	9.1

a.

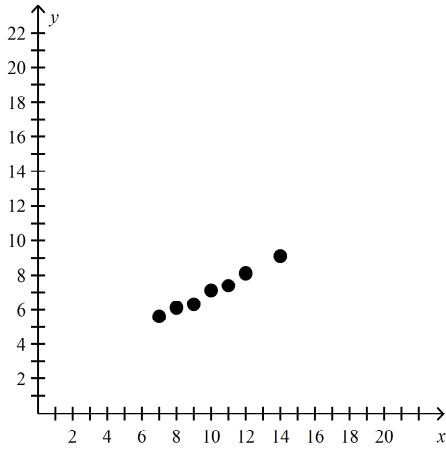


c.



$r \approx 0.99238$

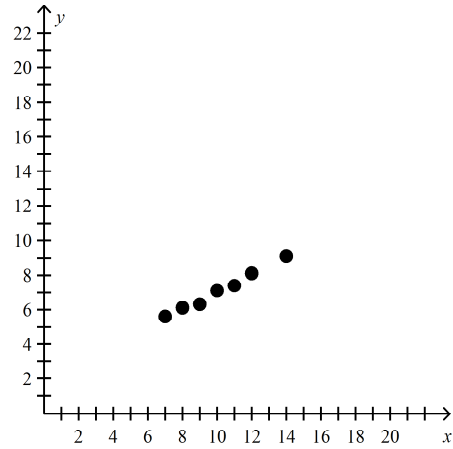
b.



$r \approx 0.99479$

$r \approx 0.97368$

d.



$r \approx 0.98359$

Name: _____

ID: A

- ____ 11. Suppose a store manager wants to know the demand y for an energy bar as a function of price x . The daily sales of three different energy bars (different prices) are shown in the table. Use the regression capabilities of a graphing calculator to find the least squares regression line for the data.

Price, x	\$1.29	\$1.49	\$1.69
Demand, y	430	355	310

- a. $\hat{y} = -300x + 812$
- b. $\hat{y} = -298x + 817$
- c. $\hat{y} = -300x + 762$
- d. $\hat{y} = -290x + 817$

- ____ 12. For two weeks, Mark recorded the color of the traffic light at the intersection of Main Street and North Avenue as his school bus approached the intersection. The results were: red, red, red, red, red, red, green, red, red, yellow.

Make a frequency table for the data.

a.

Color	Number
Red	1
Green	8
Yellow	1
Total	10

c.

Color	Number
Red	8
Green	1
Yellow	1
Total	7

b.

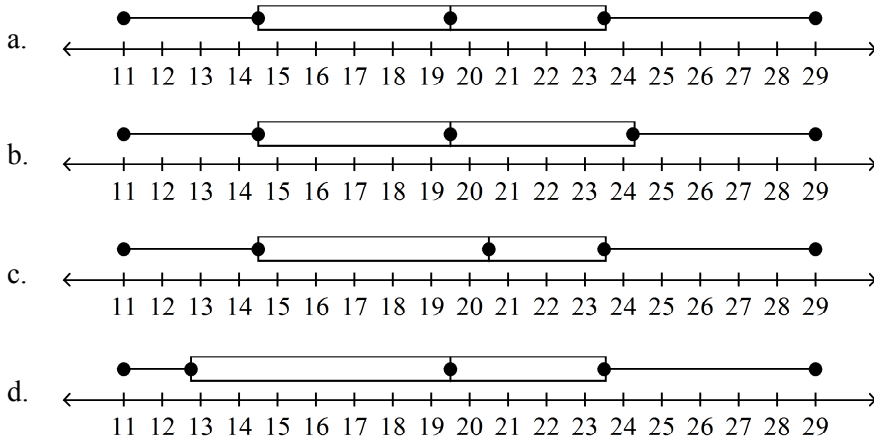
Color	Number
Red	8
Green	1
Yellow	1
Total	10

d.

Color	Number
Red	1
Green	1
Yellow	8
Total	14

Make a box-and-whisker plot of the data.

- ____ 13. 24, 18, 29, 21, 16, 23, 13, 11



Find the values of the 30th and 90th percentiles of the data.

- _____ 14. 129, 113, 200, 100, 105, 132, 100, 176, 146, 152
- | | |
|--|--|
| a. 30th percentile = 105;
90th percentile = 200 | c. 30th percentile = 105;
90th percentile = 176 |
| b. 30th percentile = 113;
90th percentile = 200 | d. 30th percentile = 113;
90th percentile = 176 |

Find the range and interquartile range of the data. Round to the nearest tenth.

- _____ 15. 44, 45, 38, 8, 40, 35, 10, 55, 23, 36
- | | |
|---|---|
| a. range = 37; interquartile range = 21 | c. range = 37; interquartile range = 14 |
| b. range = 47; interquartile range = 14 | d. range = 47; interquartile range = 21 |

**Comptency 6 Statistics Pretest
Answer Section**

MULTIPLE CHOICE

1. A
2. B
3. A
4. B
5. A
6. B
7. D
8. D
9. D
10. B
11. A
12. B
13. A
14. B
15. D