

SHOW ALL WORK ON THIS TEST OR SEPARATE PAPER. Justify all answers.

In 1-3, find the ^{a)} mean, ^{b)} median, and ^{c)} mode.

1. 9, 2, 7, 11, 6, 14

2. 100, 85, 30, 85, 70, 75

(each part)

3. 79, 82, 53, 93, 77, 54, 75, 100

2 4-5, find the standard deviation for a population given the following samples.

4.

8
2
16
4
26
34

5.

18
96
30
84
92
45
63
100

(each)

6. Given the frequency distribution: (Show all work!)

Value	Frequency
12	5
14	3
18	1
20	1

(2ea)

a) Mean: b) Median: c) mode: d) range:

7. In a certain lake, the trout average 12 inches in length with standard deviation 2 inches. The bass in the lake average 4 pounds with standard deviation 0.5 pounds. Compare a 16 inch trout with a $4\frac{1}{2}$ pound bass. Which, relatively speaking, is the better catch and why?

(5)

8. Use a z-table to find the percent of the total area under the normal curve between the given z values.

a) $z = -1.7$ $z = 0$ b) $z = 1.7$ and $z = 2.2$ c) $z = -1.7$ and $z = 2.2$

(2ea)

9. Normally distributed chickens weigh a mean 1850 g, with standard deviation 150 g. What percent of chickens weigh (SHOW WORK!)
a) more than 1700 g? b) less than 1550 g?

(2ea)

c) between 1550 g and 1700 g?

MULTIPLE CHOICE: (3 ea)

10. Juan did comparison shopping on his favorite brand of cereal. Over half of the stores priced the cereal at \$2.80. Most of the other stores priced the cereal at \$2.90, except for a few who charged \$3.00. Which statement is true about the distribution of prices?
11. In a mathematics class, half the students scored 85 on an achievement test. Most of the remaining students scored 75 except for a few students who scored 20. Which of the following statements is true about the distribution of scores?
- A. The mean and mode are the same. A. The mean and mode are the same.
B. The mean is greater than mode. B. The mean and median are same.
C. The mean is less than mode. C. The mean is less than median.
D. The mean is less than median. D. The mean is greater than median.
12. A city council would like to obtain the opinion of its citizens about the operation of its garbage collection service. Which procedure would be the most appropriate for obtaining a statistically unbiased sample?
- A. Distribute a questionnaire in the city newspaper for residents to complete and mail in.
B. Select by blind drawing several geographic regions of the city and use the same method to select a sample of people within those regions to survey.
C. Select every tenth name from the telephone directory.
D. Have the persons attending a city council meeting write their names on slips of paper and drop them in a container; then choose a sample from the container to survey.

ANSWERS STATISTICS Form B-1

- 1a) 8.17 2a) 74.17 3a) 76.625
 A) 8 b) 80 d) 78
 c) None e) 85 c) None

4. mean = 15

S.D. = $\sqrt{\frac{832}{8}} = 12.8$

5. mean = 66

S.D. = $\sqrt{\frac{7106}{7}} = 31.86$

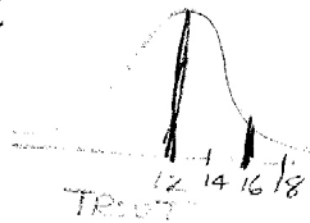
6a) mean = 14

b) Median = 13

c) mode = 12

d) range = 20 - 12 = 8

7.



16 in Trout

$z = 2$ s.d. above mean.



4.5 in Bass $z = 1$ s.d. above mean.

Trout: Better bet, since its z value is further to the right of the mean.

8a) 45.5%

b) 3.1%

c) 94.1%

9a) 54%

b) 2.5% (or 2.3%)

c) 13.5% (or 13.6%)



10. B.

11. C

12. B.