

Show all work on this test or on separate paper.  
Turn in all work sheets.

Given the numbers, find a) mean b) median c) mode

1. 6, 8, 6, 15, 20

2. 8, 15, 3, 6, 9, 4

3. 70, 60, 80, 100, 50, 50

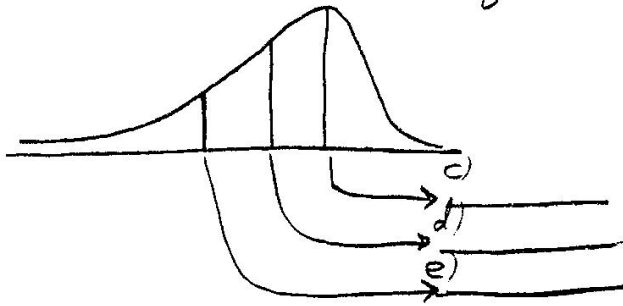
4. 8, 11, 8, 2, 11

In 5-6, find the standard deviation (nearest hundredth)

5. 
$$\begin{array}{r} 8 \\ 12 \\ 8 \\ 7 \\ 5 \\ 8 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 38 \\ 152 \\ 24 \\ 38 \\ \hline 48 \end{array}$$

7. The following distribution is <sup>a)</sup> \_\_\_\_\_ to the <sup>b)</sup> \_\_\_\_\_.  
 Label the measures of central tendency:



8. A set of scores are normally distributed with mean 85 and standard deviation 5. Label the distribution and answer the questions.

a) what percent are between 80 and 90? \_\_\_\_\_

b) what percent are between 75 and 95? \_\_\_\_\_

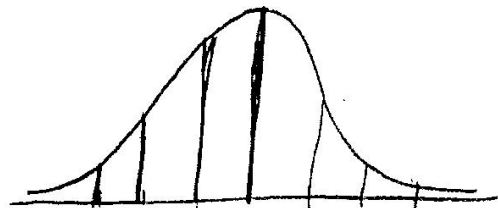
c) what percent are between 70 and 100? \_\_\_\_\_

d) what percent are between 70 and 90? \_\_\_\_\_

e) what percent are above 90? \_\_\_\_\_

f) what percent are below 75? \_\_\_\_\_

g) what percent are between 90 and 95? \_\_\_\_\_



9. Wages in a company are normally distributed with mean \$10 per hour and standard deviation \$1.50. If there are 300 people in the company, how many

a) earn between \$7.00 and \$10.00 per hour? \_\_\_\_\_

b) earn between \$8.50 and \$11.50 per hour? \_\_\_\_\_

c) earn less than \$8.50 per hour? \_\_\_\_\_

MULTIPLE CHOICE

In 10-11,

Hours Worked per Week	Percent of Employees
1-10	11
11-20	23
21-30	28
31-40	38

10. What percent of employees worked less than 21 hours/week?      11. What interval contains the mode of the number of hours worked?
- A. 23%   B. 28%   C. 34%   D. 66%      A. 1-10   B. 11-20   C. 21-30   D. 31-40

In 12-13,

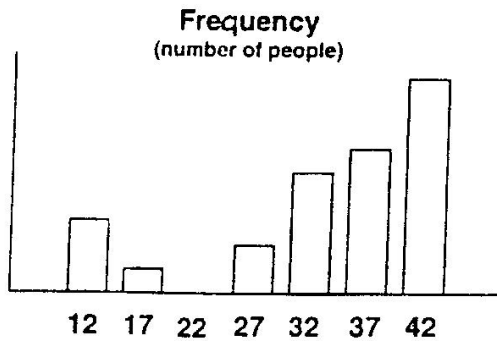
job performance ratings have been scaled so that the rating listed below correspond to the indicated percentile ranks. Five is the best rating that can be given and 0 is the worst.

Rating	Percentile Rank
5	99
4	95
3	79
2	37
1	17
0	05

12. What percent of the employees received ratings between 2 and 4?      13. Seventy-nine percent of the employees received ratings below which number?
- A. 37%   B. 58%   C. 79%   D. 211%      A. 1   B. 2   C. 3   D. 4

14. 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.

15. The graph below represents the ages of a random selection of people who caught a particular virus in 1993. Select the statement that is true about the distribution of ages.

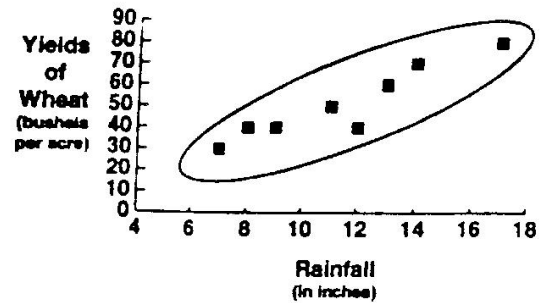


- A. The mode is greater than the mean.
- B. The mode and the mean are the same.
- C. The median is greater than the mode.
- D. The median and the mode are the same.

17. 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.
- B. The mean and median are same.
- C. The mean is less than median.
- D. The mean is greater than median.

16. The following plot depicts the rainfall in inches and the yields of wheat in bushels per acre.



Which of the following best describes the relationship between the amount of rainfall and yields of wheat

- A. There is no apparent association between rainfall and wheat yield.
- B. An increase in rainfall caused an increase in wheat yield.
- C. There is a positive association between rainfall and wheat yield.
- D. There is a negative association between rainfall and wheat yield.

FINALS MATH STATISTICS FORM D

1. 6, 6, 8, 15, 20  
 8  
 6  
 15  
 20  
 $\frac{55}{5} = 11$   
 Mean

2. 8, 15, 3, 4, 9, 15  
 3  
 6  
 4  
 $\frac{45}{5} = 9$   
 Mean

3. 70, 60, 80, 90, 100, 50, 50  
 61.11  
 $\frac{611.1}{9} = 68.3$   
 Mean

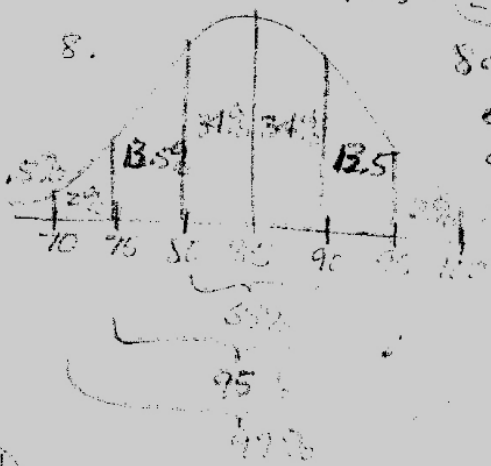
4. 8, 11, 11, 11, 11, 11, 11  
 8, 11  
 $\frac{40}{5} = 8$   
 Mean

5. Dev. (Dev)<sup>2</sup>  
 8 - 9 = -1      0  
 12 - 9 = 3      9  
 8 - 9 = -1      1  
 7 - 9 = -2      4  
 5 - 9 = -4      16  
 9 - 9 = 0      0  
 $\frac{26}{5} = 5.2$   
 Mean

6. 38 - 60 = -22      484  
 152 - 60 = 92      8464  
 24 - 60 = -36      1296  
 88 - 60 = 28      784  
 45 - 60 = -15      225  
 $\frac{300}{5} = 60$   
 Mean

$\frac{2174.4}{5} = 434.88$   
 $\sqrt{2174.4} = 46.63$   
 d) 2%  
 3.5  
 34  
 31  
 33.2  
 f) 20%  
 g) 3.5

- 7. standard
- a) 2.1
- b) 1.0
- c) 1.0
- e) 1.0



- 8. a) 31% + 31% = 62%
- b) 15%
- c) 99%
- 5%
- 3.5
- 16.0%

9.



- a) 34% + 34% = 68%
- b) 13.5% + 13.5% = 27%
- c) 20% + 34% = 54%
- d) 16% + 34% = 50%
- e) 13.5% + 34% = 47.5%
- f) 13.5% + 34% = 47.5%
- g) 13.5% + 34% = 47.5%
- h) 13.5% + 34% = 47.5%
- i) 13.5% + 34% = 47.5%
- j) 13.5% + 34% = 47.5%
- k) 13.5% + 34% = 47.5%
- l) 13.5% + 34% = 47.5%
- m) 13.5% + 34% = 47.5%
- n) 13.5% + 34% = 47.5%
- o) 13.5% + 34% = 47.5%
- p) 13.5% + 34% = 47.5%
- q) 13.5% + 34% = 47.5%
- r) 13.5% + 34% = 47.5%
- s) 13.5% + 34% = 47.5%
- t) 13.5% + 34% = 47.5%
- u) 13.5% + 34% = 47.5%
- v) 13.5% + 34% = 47.5%
- w) 13.5% + 34% = 47.5%
- x) 13.5% + 34% = 47.5%
- y) 13.5% + 34% = 47.5%
- z) 13.5% + 34% = 47.5%

- 10. 11 + 23 = 34%
- 11. 31 - 10 = 21%
- 12. 34% + 34% = 68%
- 13. 3%
- 14. 13.5%
- 15. 13.5%
- 16. 13.5%
- 17. 13.5%
- 18. 13.5%
- 19. 13.5%
- 20. 13.5%
- 21. 13.5%
- 22. 13.5%
- 23. 13.5%
- 24. 13.5%
- 25. 13.5%
- 26. 13.5%
- 27. 13.5%
- 28. 13.5%
- 29. 13.5%
- 30. 13.5%
- 31. 13.5%
- 32. 13.5%
- 33. 13.5%
- 34. 13.5%
- 35. 13.5%
- 36. 13.5%
- 37. 13.5%
- 38. 13.5%
- 39. 13.5%
- 40. 13.5%
- 41. 13.5%
- 42. 13.5%
- 43. 13.5%
- 44. 13.5%
- 45. 13.5%
- 46. 13.5%
- 47. 13.5%
- 48. 13.5%
- 49. 13.5%
- 50. 13.5%