

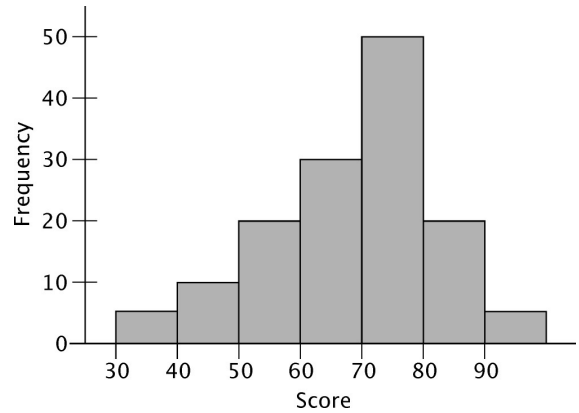
## Summarizing Distributions

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

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

1. Class A has 28 students and a mean of 75% and class B has 30 students and a mean of 62%. To 1 decimal place, what is the combined average of the two classes?
2. Company X has 1200 employees and promotes an average 89% of its employees. Company Y has 3400 employees and promotes an average 71% of its employees. Company Z has 2350 employees. The combined promotion average for all three companies is 65%. What is the average percentage of employees that Company Z promotes?
3. A student's four test scores were 88, 91, 93 and 86. What score would be needed on a fifth test to obtain a mean of 90 for all five tests?  
  
A. 90      B. 92      C. 91      D. 96
4. The set of scores on a mathematics test is 64, 71, 72, 74, 75, 78, 78 and 96. The median score is \_\_\_\_\_.  
  
A.  $74\frac{1}{2}$       B. 76      C. 75      D. 78

5. The histogram of scores of geology midterm test is given below.



Which of the following statements about the distribution of the above scores is true?

- A. The class average is greater than 75.
- B. More than 50% of the students scored above 63 on the test.
- C. More than one of the other statements are true.
- D. None of the statements are true.

6. A calculus teacher randomly selects a sample of five students. He obtains data on how often each has been late to class, so far this semester. The data are below:

3 9 1 4 8

- a) Give the sample mean for the data.
- b) Find the sample median for the data.
- c) Find the sample variance for the data.
- d) Find the sample standard deviation for the data.

7. Afsani wants to live in a city which has a temperature that changes as little as possible throughout the year. The table gives information about the city of Blaine.

minimum temperature	2
lower quartile	12
median	17
upper quartile	23
maximum temperature	30

What is the range of temperatures for Blaine?

- A. 29      B. 17      C. 11      D. 28

8. Calculate the standard deviation of 32, 24, 16, 62, 52 to 2 decimal places.

- A. 13.72    B. 15.92    C. 17.23    D. 19.27

9. The number of phone calls received by the complaint department of a small company over a five day period is as follows:

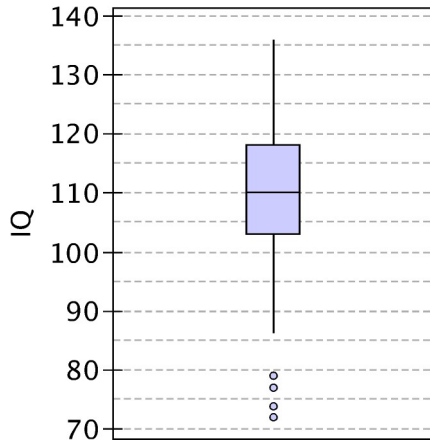
28, 26, 33, 41, 47

Find the variance for this data.

- A. 7.2      B. 62.8      C. 8.9      D. 78.5

10. A store sells boxes of doughnuts. Each box contains 12 doughnuts, and each doughnut is either chocolate or maple. The number of chocolate doughnuts in a box has a mean of 4 and a standard deviation of 2.6. If you buy 7 boxes of doughnuts, what is the standard deviation of the number of maple doughnuts that you will get? The numbers of maple doughnuts in different boxes are independent of one another.

11. Educational data was recorded for 78 seventh graders. For the students' IQ, a boxplot was drawn, as shown below.



What is the interquartile range?

- A. 64      B. 50      C. 15      D. 7.5

12. The stem-and-leaf plot shows the math scores of 32 students. Samuel's score is 69%. At parent-teacher night, his father asked the teacher in what quarter of the class his score was in.

Math Scores	
9	0 1 2 2 6
8	1 1 3 3 4 6 6 7 9
7	3 3 5 6 6 6 6 8
6	0 4 7 8 9 9
5	0 8 9
4	2

Select the correct statement.

- A. Samuel's score is in the second quarter of the class.  
 B. Samuel's score is in the third quarter of the class.  
 C. Samuel's score is in the bottom quarter of the class.  
 D. The quartile cannot be determined from the stem-and-leaf plot.

13. Marcus recorded the number of pages in each of his twelve text books in a stem-and-leaf plot.

17	2 3 8
18	0
19	4 7
20	4 8
21	0 1 4
22	0

What is the upper quartile?

- A. 179.5      B. 210      C. 220      D. 421

14. A test had a mean of 72% and a standard deviation of 8. What is the  $z$ -score for a test score of 85?

- A. 1.625                      B. -1.625  
 C. -0.813                     D. 0.615

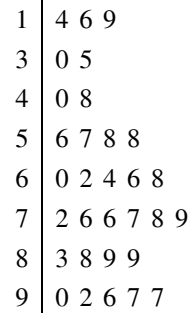
15. On his last chemistry test, Cory got a score of 83%. If the mean was 69 and the standard deviation was 10.3, what was his  $z$ -score if we assume the scores are normally distributed?

- A. 1.359                      B. -1.359  
 C. 4.362                     D. 2.561

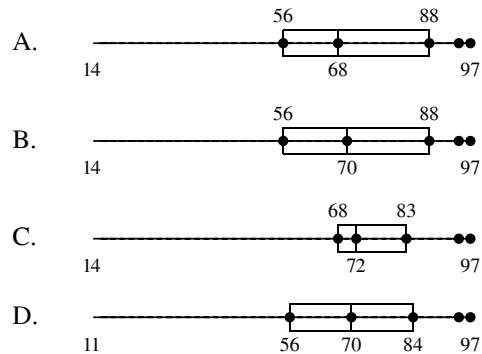
16. Dea's test score placed her in the 81<sup>st</sup> percentile. If 573 students took the test, then approximately how many students had a score higher than Dea's?

- A. 109    B. 492    C. 154    D. 464

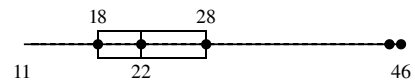
17. Consider the following stemplot:



Which of the following box plots represents this data?

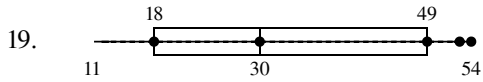


18. The boxplot shows the cost of 40 blenders.



If you had \$28 how many of the blenders could you afford?

- A. 10    B. 30    C. 40    D. 25



Using the boxplot select the inequality that can be used to describe the middle half of the data.

- A.  $18 \leq x \leq 49$       B.  $11 \leq x \leq 49$   
 C.  $11 \leq x \leq 54$       D.  $30 \leq x \leq 49$

20. The table represents the distribution of the ages of 19 neighborhood children.

Age	Number of Children	Age	Number of Children
10	1	5	0
9	2	4	3
8	2	3	2
7	3	2	4
6	1	1	1

If each child's age increases by 2 which measure would remain the same?

- A. upper quartile      B. lower extreme  
 C. range      D. mean

21. The median of a set of numbers is 25. If 7 is added to each member of the set, what is the new median?

- A. 175      B. 32      C. 25      D. 18

22. There are five children aged 3, 3, 4, 5 and 5 years in a room. If another 4-year-old child enters the room, what will happen to the mean and standard deviation of the ages of the children in the room?

- A. The mean will stay the same but the standard deviation will increase.  
 B. The mean will stay the same but the standard deviation will decrease.  
 C. The mean and standard deviation will both decrease.  
 D. The mean and standard deviation will both increase.