

Name: _____

Class Number: _____.

Math 54 Exam 1

Inst: Dr. C.W. Walker

Problem	Points	Score	Problem	Points	Score
1	5		11	5	
2	5		12	5	
3	5		13	5	
4	5		14	5	
5	5		15	5	
6	5		16	5	
7	5		17	5	
8	5		18	5	
9	5		19	5	
10	5		20	5	
Total				100	

Instructions and Information:

- 1) Print your name and assigned class number at the top of the page.
- 2) Make sure your exam has 20 problems. Do not tear any pages out.
- 3) This is a closed book and closed notes exam but you may use the table/formula sheet from the book. You may use a calculator. **You have 60 minutes to take this exam.**
- 4) The points for each problem are shown above.

Problem 1. Recall we studied quantitative variables along with nominal, ordinal and ratio data. The color of a car someone owns is an example of which variable and data type?

Problem 2. Bank A has 3 separate teller lines. Bank B has one line for 3 tellers. Which bank has the longest average waiting time (or are they the same)?

Problem 3. There are 45 students in a class seated in 5 rows with 9 students per row. 5 students are chosen by picking one student at a time from each row. Is this an example of a random sample but not a simple random, a simple random sample, or neither?

Problem 4. A bear is put to sleep with a drug so that it can be weighed. Is this an experiment or observational study?

Problem 5. Is the political party someone is associated with an example of a nominal, interval or ratio level of measurement?

For Problems 6-9 consider the following set of numbers that represent a *sample*.

4.1, 5.5, -2.5, 3.0.

Problem 6. For the numbers given find the mean.

Problem 7. For the numbers given find the median.

Problem 8. For the numbers given find the variance.

Problem 9. For the numbers given find the standard deviation.

Problem 10. The test scores for a particular large class had $\bar{x} = 55$ and $s = 8$. A histogram of the scores shows the distribution to be bell-shaped. 95% of the scores should fall between what two numerical values?

Problem 11. The test scores for a particular large class had $\bar{x} = 72$ and $s = 7$. A histogram of the scores shows the distribution to be bell-shaped. 2.5% of the scores should be greater than what numerical value?

Problem 12. The test scores for a particular large class had $\bar{x} = 58$ and $s = 4$. A histogram of the scores shows the distribution to be bell-shaped. What percentage of the scores should be greater than 66?

Problem 13. Using Chebyshev's theorem find the proportion of data that must lie within 4.2 standard deviations of the mean.

Problem 14. Consider the following data that represents a sample:

10, 5, 13, 4.

Compute the z-score for the number 9.

Problem 15. Consider the following data that represents a sample:

10, 7, 3, 12.

Find the value of x that corresponds to a z-score equal to 0.5.

Problem 16. Below is a frequency table.

Weight (kg)	Frequency
0.0 - 3.8	22
3.9 - 7.7	36
7.8 - 11.6	14
11.7 - 15.5	9

Construct the relative frequency table that corresponds to the frequency table given.

Problem 17. A professor gives an exam in which the average is 75 and the standard deviation is 9. After grading the exam the professor realizes that one of the problems was not worded correctly so he adds 10 points to each student's score. What will the average now be on the exam with the adjusted scores?

Problem 18. A professor gives an exam in which the average is 55 and the standard deviation is 16. After grading the exam the professor realizes that one of the problems was not worded correctly so he adds 10 points to each student's score. What will the standard deviation now be on the exam with the adjusted scores?

Problem 19. Consider the following set of data:

10, 3, 4, 12, 16, 32, 9, 11

For this data find P_{90} .

Problem 20. Give an example of a data set consisting of three real numbers such that the median of the data is four times the mean of the data.