Name: _____

Calculus 1: Review (Test 1)

1. Find the mean of the following list of numbers.

   8, 8, 11, 12, 10, 10, 11, 10

2. Find the mean of the following list of numbers.

   2, 1, 3, 5, 3, 1, 3, 2

3. Find the mean deviation of the following list of numbers.

   6, 3, 6, 5, 4, 4

4. Find the standard deviation of the following list of numbers.

5, 7, 7, 6, 15

5. Suppose we have collected the following list of numbers.

15, 20, 24, 15, 9, 23, 22, 21, 9, 12

Compute the z-scores of 5 and 26 with respect to this list.

6. Suppose we have collected the following list of numbers.

8, 6, 6, 6, 7, 9, 8, 9, 5, 9

Compute the z-scores of 1 and 13 with respect to this list.

7. Find the coefficient of variation of the following list of numbers.

$$14, 11, 16, 14, 17, 15$$

8. Suppose we roll a single 20-sided die, whose faces are numbered from 1 to 20. What is the probability that we roll a number strictly less than 15?

9. Suppose we draw a single card from a standard 52-card deck. What is the probability that we draw either a spade or a face card?

10. Suppose we roll two 6-sided dice, one red and one green, whose faces are numbered from 1 to 6. What is the probability that we roll two numbers whose sum is exactly 8?

11. Suppose we roll two 6-sided dice, one orange and one purple, with faces labeled 1 through 6. Compute the probability of the following events.

    (a) The dice show the same number.
    (b) The sum of the numbers on the dice is exactly 5.

12. A survey was conducted to determine the study habits and final grades of statistics students. 264 stats students were asked whether or not they passed their stats class and whether they studied alone or with others. The results of the survey are collected in the following table.

	Pass	Fail
Study Alone	83	25
Study with Others	137	19

    Use this data to answer the following.

    (a) What is the probability that a given student passed statistics, given that they studied alone?
    (b) What is the probability that a given student studied alone, given that they passed statistics?

13. Match each sampling method to its description.

____ Random Sampling

____ Simple Random Sampling

____ Convenience Sampling

____ Stratified Sampling

____ Cluster Sampling

____ Self-Selected Sampling

A. Divide the population into subpopulations, then choose emphsome individuals from emphall subpopulations.

B. Each individual has an equal chance of being selected.

C. Divide the population into subpopulations, then choose emphall individuals from emphsome subpopulations.

D. Select individuals which are easy to find.

E. Each subset of a given size has an equal chance of being selected.

F. Allow individuals to choose whether or not to be in the sample.