

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

Directions: This exam contains six problems worth a total of 100 points. For each computational problem, you must first write the formula to be used and present all your subsequent work in order to receive full or partial credit. Circle your final answers.

1. The each of the following, determine whether the data are discrete or continuous. (4 pts. ea.)
  - (a) Numbers of door dents for a sample of 20 cars ..... \_\_\_\_\_
  - (b) Hourly wages (in dollars) for part-time jobs ..... \_\_\_\_\_
  - (c) Lengths (in centimeters) of five lizards ..... \_\_\_\_\_
  - (d) Precipitations (in millimeters) for 30 cities ..... \_\_\_\_\_
  
2. For an intermediate calculus course, the scores on the final exam had a mean of 64.8 with a standard deviation of 12.3. The median score was 68.0.
  - (a) What do the relative locations of the mean and median tell you about the skewness of the distribution of the exam scores? (8 pts.)
  
  - (b) Compute the  $z$ -score for a student whose exam score was 60. (8 pts.)
  
3. Refer to Problem 2. The instructor of the course felt that the scores were lower than anticipated. Thus, the instructor decided to apply a “curve” by adding 10 points to every student. No substantial computation is necessary to answer the following questions.
  - (a) What would the value of the mean score be after applying the curve? (8 pts.)
  
  - (b) What would the value of the standard deviation be after applying the curve? (8 pts.)

4. Consider the following data on parking fees at various universities.

$$X: \{228, 70, 144, 65, 200, 35\}$$

For the questions below, you may use your calculator to perform basic algebraic operations, but you may not use its built-in statistical functions.

- (a) Compute the median. (6 pts.)
- (b) Compute the sample mean. (8 pts.)
- (c) Compute the sample *variance*. (10 pts.)
5. What does it mean to say that a study is conducted in a double-blind fashion? Explain in one short sentence. (8 pts.)
6. Featured below are measurements on shoe sizes for 10 male adults.

$$Y: \{9.0, 12.0, 10.5, 7.5, 10.0, 6.5, 9.5, 9.5, 10.0, 11.5\}$$

- (a) Complete the frequency-distribution table below. (10 pts.)

Class interval	Frequency	Relative freq.	Cumulative rel. freq.
12 to <13			
11 to <12			
10 to <11			
9 to <10			
8 to <9			
7 to <8			
6 to <7			
Total			

- (b) Using the space next to the frequency-distribution table above, construct a stem-and-leaf display. (10 pts.)