Math 105-001
Elementary Probability & Statistics
Exam1, Fall 2005
October 3, 2005
Tools: Basic Calculator
[Show all work. No credits will be given without proper mathematical justification]

1. Construct a frequency distribution with five classes from the following data set:
   (10 pts)

   > 7, 39, 13, 9, 25, 8, 22, 0, 2, 18, 2, 30, 7, 35, 12, 15, 8, 6, 5, 29,
   > 0, 11, 39, 16, 15

2. Calculate midpoint, relative frequency, cumulative frequency, class boundaries,
   class width from the data set given in question (1). (10 pts)

3. The sample annual salaries, in thousands of dollars, for municipal employees in Dallas
   and Houston are listed as follows:

   > *Dallas*:   34.9, 25.4, 17.3, 16.8, 26.8, 24.7, 29.4, 32.7, 25.5
   > *Houston*:   25.6, 23.2, 26.7, 27.7, 25.4, 26.4, 18.3, 26.1, 31.3

   a) Find the range, variance, and standard deviation of each data set. (10 pts)
   b) Interpret the results in the context of the real life-setting. (2 pts)

4. The test scores of 15 employees enrolled in a CPR training course are listed as follows:

   > 13, 9, 18, 15, 14, 21, 7, 10, 11, 20, 5, 18, 37, 16, 17

   a) Find the *five-number summary statistics* from the data set. (8 pts)
   b) Draw a Box-plot of the data set and describe the shape of the Box-plot. (6 pts)

5. The following data sets represents the sample ages of a class.

   > 20, 20, 20, 20, 20, 20, 21, 21, 21, 21, 22, 22, 22, 23, 23, 23, 23, 24, 24, 65

   a) Find the mean, the median, and the mode from the above data sets. (6 pts)
   b) Which measures of central tendency best describes a typical entry? (2 pts)

6. You are taking a class in which your grade is determined from five sources: 50% from
   your test mean, 15% from your midterm, 20% from your final exam, 10% from your
   computer lab work, and 5% from your homework. Your scores are 86 (test mean), 96
   (midterm), 82 (final exam), 98 (computer lab), and 100 (homework). What is the
   weighted mean of your scores? (8 pts)

7. A six-sided die is rolled. Find the probability of the following events: (12 pts)
   a) R: rolling a 3.
   b) S: rolling a 7.
   c) T: rolling a number less than 5

8. Two cards are selected without replacing the first card from a standard deck. Find the probability of selecting a king and then selecting a queen. (6 pts)

9. A coin is tossed and die is rolled. Find the probability of getting a head and then rolling a 6. (10 pts)

10. The following table shows the results of a survey in which 144 families were asked if they own a computer and if they will be taking a summer vacation this year.

| | | Summer Vacation | |
		Yes	No
Own			
a	Yes	37	8
Computer	No	40	59

   a) Find the probability that a randomly selected family is taking a summer vacation this year. (4 pts)
   b) Find the probability that a randomly selected family is taking a summer vacation this year, given that they own a computer. (4 pts)
   c) Are the events of owning a computer and taking a summer vacation this year independent or dependent? Explain. (2 pts)