Exercise 2

1. The following data give the odometer mileage (rounded to the nearest thousand miles) for all 20 cars that are for sale at a dealership.

   27 27 28 36 38 40 40 43 43 48

   50 58 62 72 77 84 86 86 90 94

   a. Calculate the mean and median. Do these data have a mode? Why or why not?
   b. Compute the range, variance, and standard deviation for these data.

2. The following data give the number of driving citations received during the last three years by 11 drivers.

   4 8 0 3 11 7 14 8 13 7 9

   a. Find the mean and median for these data. Do these data have a mode? Why or why not?
   b. Calculate the range, variance, and standard deviation.

3. The mean time taken to learn the basics of a software program by all students is 200 minutes with a standard deviation of 20 minutes.
   a. Using Chebyshev's theorem, find the minimum percentage of students who learn the basics of this software program in
      i. 160 to 240 minutes
      ii. 140 to 260 minutes
   b. Using Chebyshev's theorem, find the interval that contains the times taken by at least 84% of all students to learn this software program.

4. The mean time taken to learn the basics of a software program by all students have a bell-shaped distribution with a mean of 200 minutes and a standard deviation of 20 minutes.
   a. Using the empirical rule, find the (approximate) percentage of students who learn the basics of this software program in
      i. 180 to 220 minutes
      ii. 160 to 240 minutes

b. Using the empirical rule, find the interval that contains the times taken by (approximate) 99.7% of all students to learn this software program.

5. A student washes her clothes at a laundromat once a week. The data below give the time (in minutes) she spent in the laundromat for each of 15 randomly selected weeks. Here, time spent in the laundromat includes the time spent waiting for a machine to become available.

62 67 72 73 75 77 81 83
84 85 90 93 107 112 135

a. Prepare a box-and-whisker plot.
b. Is the data set skewed in any direction? If yes, is it skewed to the right or to the left?
c. Does this data set contain any outliers?