77. The closing stock prices of 35 U.S. semiconductor manufacturers are given as follows.
8.625; 30.25; 27.625; 46.75; 32.875; 18.25; 5; 0.125; 2.9375; 6.875; 28.25; 24.25; 21; 1.5; 30.25; 71; 43.5; 49.25; 2.5625; 31; 16.5; 9.5; 18.5; 18; 9; 10.5; 16.625; 1.25; 18; 12.87; 7; 12.875; 2.875; 60.25; 29.25

a. In words, X = ______________
b. i. $\overline{x}$ = _____
   ii. s_x = _____
   iii. n = _____
c. Construct a histogram of the distribution of the averages. Start at x = –0.0005. Use bar widths of ten.
d. In words, describe the distribution of stock prices.
e. Randomly average five stock prices together. (Use a random number generator.) Continue averaging five pieces together until you have ten averages. List those ten averages.
f. Use the ten averages from part e to calculate the following.
   i. $\overline{x}$ = _____
   ii. s_x = _____
g. Construct a histogram of the distribution of the averages. Start at x = -0.0005. Use bar widths of ten.
h. Does this histogram look like the graph in part c?
i. In one or two complete sentences, explain why the graphs either look the same or look different?
j. Based upon the theory of the **central limit theorem**, $\overline{X}$ ~ _____(_____,____)

Use the following information to answer the next three exercises: Richard's Furniture Company delivers furniture from 10 A.M. to 2 P.M. continuously and uniformly. We are interested in how long (in hours) past the 10 A.M. start time that individuals wait for their delivery.

78. X ~ _____(_____,_____)
a. $U(0,4)$
b. $U(10,2)$
c. $E\chi p(2)$
d. $N(2,1)$

79. The average wait time is:
a. one hour.
b. two hours.
c. two and a half hours.
d. four hours.

80. Suppose that it is now past noon on a delivery day. The probability that a person must wait at least one and a half **more** hours is:
a. $\frac{1}{4}$
b. $\frac{1}{2}$
c. $\frac{3}{4}$
d. $\frac{3}{8}$

Use the following information to answer the next two exercises: The time to wait for a particular rural bus is distributed uniformly from zero to 75 minutes. One hundred riders are randomly sampled to learn how long they waited.

81. The 90th percentile sample average wait time (in minutes) for a sample of 100 riders is:
a. 315.0
b. 40.3
c. 38.5
d. 65.2

82. Would you be surprised, based upon numerical calculations, if the sample average wait time (in minutes) for 100 riders was less than 30 minutes?
a. yes
b. no
c. There is not enough information.