Chapter 3

3-1.   a.   There are other factors beside serum cholesterol that may influence mortality from heart and cerebrovascular diseases, such as smoking, physical activity, hypertension, etc.

        b.   The data show that the elevation of serum cholesterol among women coincide with onset of menopause.

3-2.   The actual expenditures increased, whereas the inflation-adjusted expenditures decreased. The trend in the inflated-adjusted expenditures would provide a more realistic assessment of the food stamp program.

3-3.   Graph using years on the horizontal axis and the rates on the vertical axis, and plot the four sets of rates in four lines. The occupancy rate declined in all four types of hospitals. The decline was sharpest in the proprietary hospitals.

3-5.   The number at risk of assaults in each agency is needed to calculate a rate of assaults.

3-6.   b.

A/C	1	0	Total
1	8	20	28
0	8	10	18
Total	16	30	46

        c.   A (28) B(28) C(16)

3-7.   The coefficient of variation can be computed by taking the standard deviation and dividing by the mean.

3-8.   a.   AML: mean = 11.94, median = 8, skewed to the right; ALL: mean = 17.60, median = 12, skewed to the right. The median is more appropriate because the few longer survival times cause the mean to give a false impression of the survival data.

b.　　Requires the creation a graph.

　　c.　　stage of the disease, when was the disease diagnosed, age, gender, race, etc.

3-9.　　Since the total number of hospitals for each type of hospital is not available, it is not possible to calculate the mean occupancy rate.

3-10.　The failure rate can be calculated to summarize the data. The failure rate increased from 1980 to 1990, but the increased failure rate may or may not be related to the number of cases of foodborne illness.

3-11.　mean = 15.80, n = 50; standard deviation = 18.78, CV = 118.9%; first decile = 2, first quartile = 4, median = 8, third quartile = 19.25, ninth decile = 42.3; skewed to the right; median and percentiles would better describe the data than the mean.

3-12.　a.　　mean = 747,482,813.3, CV = 344.1%

　　b.　　median = 10^5, geometric mean = 541,170

　　c.　　the geometric mean, 5.4×10^5, seems to capture the sense of the data better than the mean or median.

3-13.　a.　　crude rate = 5.296 per 1000; sex-specific rates: 5.824 for males and 4.756 for females

　　b.　　The sex-adjusted rate will not be very different from the crude rate because the sex composition of Harris County is similar to the US sex composition.

　　c.　　sex-adjusted rate = 5.276, which is not very different from the crude rate.

3-14.　a.　　Requires the creation of a graph.

　　b.　　the correlation = 0.094, adjusting for calories; the correlation of 0.648 is due to the fact that both protein and total fat are related to calories.