14. *Writing about Distributions and Associations*

PROBLEM SET

1. Write descriptions of the following tables from *Writing about Multivariate Analysis, 2nd Edition*:

   a. the age, gender, and racial distributions shown in table 5.3 (p. 88);
   b. the distribution of major categories of federal outlays in figure 6.2b (p. 116).

2. Write a description of the race/household type associations in table 5.1 (p. 80) using the GEE approach. Hint: To compare across racial/ethnic groups, report percentage distribution of household type within each race. Why are percentages preferred to counts in this case?

3. Use the results from Zimmerman's (2003) analysis of cumulative college grade point averages (GPAs) shown in table 11A on p. 85 of this study guide to answer the following questions.

   a. Among students in the middle 70% of SAT scores, the coefficient for "female" is 0.107 with a standard error of 0.016. Write a sentence explaining the direction, magnitude, and statistical significance of that finding.
   b. Among students in the bottom 15% of SAT scores, the coefficient for the variable "roommates' math SAT score/100" is −0.038 with a standard error of 0.028. Write a sentence interpreting that finding, assuming that roommates' math SAT scores range from 400 to 800.

4. Write a description of the age pattern of mortality shown in figure 6.10 (p. 128) in *Writing about Multivariate Analysis*, *2nd Edition*. Use descriptive phrases to convey the shape of the pattern, then document with appropriate numeric evidence. Incorporate selected quantitative comparisons to illustrate the sizes of differences in the chart.

5. In the analysis conducted by Mensch et al. (2003), the association between mode of interview and odds of boys reporting a sensitive

behavior differs by the type of behavior in question (table 12A on
p. 97 of this study guide). What is such a pattern called in statistical
terms? In GEE lingo? Write paragraphs to describe that pattern to

a. a group of first-year high school students;
b. a group of graduating statistics majors.