**CHAPTER E-TEXT QUESTIONS**

**If the problem requires a Hypothesis test, complete the 5-Step Hypothesis testing procedure for each question and then answer the questions of the problem.**

**1. Write a Null and Alternative Hypothesis**

**2. Select a Level of Significance**

**3. Choose a Test Statistic**

**4. Write a decision rule for the computed test statistic**

**5. Make a decision by computing the test statistic and comparing it to the decision rule spelling out in English just what the decision means in terms of the question in the problem.**

Note: Methods of computation could include the usage of Excel®, SPSS®, Lotus®, SAS®, MINITAB®, or by hand computation.

**CHAPTER 12**

Review Exercise

**1.** (a) How does correlation analysis differ from regression analysis? (b) What does a correlation coefficient reveal? (c) State the quick rule for a significant correlation and explain its limitations. (d) What sums are needed to calculate a correlation coefficient? (e) What are the two ways of testing a correlation coefficient for significance?

**12.48** In the following regression, *X* = weekly pay, *Y* = income tax withheld, and *n* = 35 McDonald’s employees. (a) Write the fitted regression equation. (b) State the degrees of freedom for a two-tailed test for zero slope, and use Appendix D to find the critical value at *α* = .05. (c) What is your conclusion about the slope? (d) Interpret the 95 percent confidence limits for the slope. (e) Verify that *F* = *t*2 for the slope. (f) In your own words, describe the fit of this regression.



**12.50** In the following regression, *X* = total assets ($ billions), *Y* = total revenue ($ billions), and *n* = 64 large banks. (a) Write the fitted regression equation. (b) State the degrees of freedom for a two- tailed test for zero slope, and use Appendix D to find the critical value at *α* = .05. (c) What is your conclusion about the slope? (d) Interpret the 95 percent confidence limits for the slope. (e) Verify that *F* = *t*2 for the slope. (f) In your own words, describe the fit of this regression.



**CHAPTER 13**

**13.30** A researcher used stepwise regression to create regression models to predict *BirthRate* (births per 1,000) using five predictors: *LifeExp* (life expectancy in years), *InfMort* (infant mortality rate), *Density* (population density per square kilometer), *GDPCap* (Gross Domestic Product per capita), and *Literate* (literacy percent). Interpret these results.



**13.32** An expert witness in a case of alleged racial discrimination in a state university school of nursing introduced a regression of the determinants of *Salary* of each professor for each year during an 8-year period (*n* = 423) with the following results, with dependent variable *Year* (year in which the salary was observed) and predictors *YearHire* (year when the individual was hired), *Race* (1 if individual is black, 0 otherwise), and *Rank* (1 if individual is an assistant professor, 0 otherwise). Interpret these results.



**CHAPTER 14**

**14.16** (a) Plot the data on U.S. general aviation shipments. (b) Describe the pattern and discuss possible causes. (c) Would a fitted trend be helpful? Explain. (d) Make a similar graph for 1992–2003 only. Would a fitted trend be helpful in making a prediction for 2004? (e) Fit a trend model of your choice to the 1992–2003 data. (f) Make a forecast for 2004, using either the fitted trend model or a judgment forecast. Why is it best to ignore earlier years in this data set?

