14. We investigate if a period of time feels longer or shorter when people are bored compared to when they are not bored. Using independent samples, we obtain these estimates of the time period (in minutes): Sample 1 (bored): X⫽ 14.5, s2x⫽ 10.22, n ⫽ 28 Sample 2 (not bored): X⫽ 9.0, s2x⫽ 14.6, n ⫽ 34 (a) What are H0 and Ha? (b) Compute tobt. (c)With a ⫽ .05, what is tcrit? (d) What should we con-clude about this relationship? (e)Using our two approaches, how important is boredom in deter-mining how quickly time seems to pass?

16. A researcher investigates whether classical music is more or less soothing to air-traffic controllers than modern music. She plays a classical selection for one group and a modern selection for another. She gives each person an irritability questionnaire and obtains the following: Classical: n ⫽ 6, X⫽ 14.69, s2x⫽ 8.4 Modern: n ⫽ 6, X⫽ 17.21, s2x⫽ 11.6 (a) Subtracting C ⫺ M what are H0 and Ha? (b)What is tobt? (c) With a ⫽ .05, are the results significant? (d) Report the results using the correct format. (e) What should she conclude about the relationship in nature between type of music and irritability? (f) What other statistics should be computed?

24. For each of the following, which type of t-test is required? (a) Studying whether psychology or soci-ology majors are more prone to math errors on a statistics exam. (b) The study in part a, but for each psychology major, there is a sociology major with the same reading score. (c) A study of the spend-ing habits of a group of teenagers, comparing the amount of money each spends in an electronic games store and in a clothing store. (d) A study of the effects of a new anti-anxiety drug, measuring participants’ anxiety before and after administra-tion of the drug. (e) Testing whether women in the U.S. Army are more aggressive than women in the U.S. Marine Corps.

18. You investigate whether the older or the younger male in pairs of brothers tends to be more extroverted. You obtain the following extrover-sion scores:Sample 1 (Younger) Sample 2 (Older)10 1811 1718 1912 1615 1513 1919 1315 20 (a) What are H0 and Ha? (b) Compute tobt. (c) With a ⫽ .05, what is tcrit? (d) What should you con-clude about this relationship? (e) Which of our approaches should we use to determine the effect size here?

21. An experimenter investigated the effects of a sensitivity-training course on policemen’s effectiveness at resolving domestic disputes (using independent samples who had or had not completed the course). The dependent variable was the ability to resolve a domestic dispute. These success scores were obtained:No Course Course11 1314 1610 1412 17 81115 1412 1513 18 91211