Name:	Date:
Elementary Statistics	Period:

Homework: 1.1 and 1.2 (textbook p.11-15 #1-4, 6, 8, 10, 11, 15, 25, 28, 31, 36)

- 1. What is the difference between statistical significance and practical significance? Can a statistical study have statistical significance but not practical significance?
- 2. In conducting a statistical study, why is it important to consider the source of the data?
- 3. What is a voluntary response sample and why is such a sample generally not suitable for a statistical study?
- 4. Explain what is meant by the statement: "Correlation does not imply causation."
- 5. An article in Journal of Nutrition (Vol. 130, No. 8) noted that chocolate is rich in flavonoids. The article notes that "regular consumption of foods rich in flavonoids may reduce the risk of coronary heart disease." The study received funding from Mars, Inc., the candy company, and the Chocolate Manufacturers Association. Does this source have the potential to create bias in the study? Why or why not?
- 6. Data Set 1 in Appendix B includes body measurements obtained by the U.S. Department of Health and Human Services and the National Center for Health Statistics. Does this source have the potential to create bias in the study? Why or why not?
- 7. In a survey of 109 subjects, each was asked to indicate how many text messages they send and receive each day. The sample consisted of those who chose to respond to the request posted on the StatCrunch website. Does this sampling methods appear to be sound or flawed? Why?

- 8. In a survey of 514 human resource professionals, each was asked about the importance of the appearance of a job applicant. The survey subjects were randomly selected by Harris Interactive Pollsters. Does this sampling methods appear to be sound or flawed? Why?
- 9. When making random guesses for difficult multiple-choice test questions with possible answers of a, b, c, d, and e, we expect to get about 20% of the answers correct. The Ashton Prep Program claims to have developed a better method of guessing. In a test of that program, guesses were made for 100 answers and 23 were found to be correct. There is a 23% chance of getting such results if the program has no effect. Do the results appear to have statistical significance? Practical significance? Explain.
- 10. In a poll sponsored by the Idaho Potato Commission, 1000 adults were asked to select their favorite vegetables, and the favorite choice was potatoes, which were selected by 26% of the respondents. Identify what's wrong with this study.
- 11. In the years following the end of World War II, it was found that there was a strong association between the number of human births and the stork population. It therefore follows that storks cause babies. Identify what's wrong with this study.
- 12. In a Harris Poll of 2302 adults, 14% said they have a tattoo.
 - a. What is the exact value that is 14% of 2302 adults?
 - b. Could the result from part a be the actual number of adults who said that they have a tattoo?
 - c. What is the actual number of adults who said they have a tattoo?
 - d. Among the 2302 respondents, 46 said they had face piercings only. What percentage of respondents had face piercings only?
- 13. A New York Times editorial criticized a chart caption that described a dental rinse as one that "reduces plaque on teeth by over 300%." What is wrong with this statement?