

## Chapter 1 Exercises

### Prerequisites

All material presented in chapter 1

### Selected answers

1. A teacher wishes to know whether the males in his/her class have more conservative attitudes than the females. A questionnaire is distributed assessing attitudes and the males and the females are compared. Is this an example of descriptive or inferential statistics? ( [Ch. 1.C](#) & [Ch. 1.D](#))
2. A cognitive psychologist is interested in comparing two ways of presenting stimuli on subsequent memory. Twelve subjects are presented with each method and a memory test is given. What would be the roles of descriptive and inferential statistics in the analysis of these data? ([Ch. 1.C](#) & [Ch. 1.D](#))
3. If you are told that you scored in the 80th percentile, do you know exactly what that means and how it was calculated? Explain. ([Ch. 1.G](#))
4. A study is conducted to determine whether people learn better with spaced or massed practice. Subjects volunteer from an introductory psychology class. At the beginning of the semester 12 subjects volunteer and are assigned to the massed-practice condition. At the end of the semester 12 subjects volunteer and are assigned to the spaced-practice condition. This experiment involves two kinds of non-random sampling: (1) Subjects are not randomly sampled from some specified population and (2) subjects are not randomly assigned to conditions. Which of the problems relates to the generality of the results? Which of the problems relates to the validity of the results? Which problem is more serious? ([Ch. 1.D](#))
5. Give an example of an independent and a dependent variable. ([Ch. 1.F](#))
6. Categorize the following variables as being qualitative or quantitative: ([Ch. 1.F](#))
  - Rating of the quality of a movie on a 7-point scale
  - Age
  - Country you were born in
  - Favorite Color
  - Time to respond to a question
7. Specify the level of measurement used for the items in Question 6. ([Ch. 1.H.1](#))
8. Which of the following are linear transformations? ([Ch. 1.K](#))

Converting from meters to kilometers  
 Squaring each side to find the area  
 Converting from ounces to pounds  
 Dividing each person's height by his or her weight  
 Multiplying all numbers by 2 and then adding 5  
 Converting temperature from Fahrenheit to Centigrade

9. The formula for finding each student's test grade (g) from his or her raw score (s) on a test is as follows:  $g = 16 + 3s$   
 Is this a linear transformation? If a student got a raw score of 20, what is his test grade? (Ch. 1.K)

10. For the numbers 1, 2, 4, 16, compute the following: (Ch. 1.J)

$$\begin{aligned} \Sigma X \\ \Sigma X^2 \\ (\Sigma X)^2 \end{aligned}$$

11. If you wanted to conduct a study about the relationship between the amount of television watched a day and sports participation in children, which of the following two choices (a or b) would be the better way of asking that question? (Ch. 1.H.3)

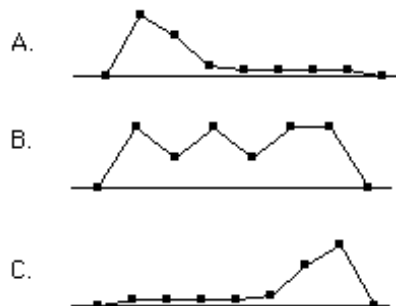
a) Check the best description of how much television you watch per day:

a lot \_\_\_\_\_ some \_\_\_\_\_ a little \_\_\_\_\_ none \_\_\_\_\_

b) Write the number of hours you spend watching television per day:

\_\_\_\_\_

12. Which of the frequency polygons has a large positive skew? Which has a large negative skew? (Ch. 1.I)



13. What is more likely to have a skewed distribution: time to solve an anagram problem (where the letters of a word or phrase are rearranged into another word or phrase like "dear" and "read" or "funeral" and "real fun") or scores on a vocabulary test? (Ch. 1.I)

## Questions from Case Studies:

The following questions are from the [Angry Moods](#) (AM) case study.

14. (AM#1) Which variables are the participant variables? (They act as independent variables in this study.) ([Ch. 1.F](#))

15. (AM#2) What are the dependent variables? ([Ch. 1.F](#))

16. (AM#3) Is Anger-Out a quantitative or qualitative variable? ([Ch. 1.F](#))

The following question is from the [Teacher Ratings](#) (TR) case study.

17. (TR#1) What is the independent variable in this study? ([Ch. 1.F](#))

The following questions are from the [ADHD Treatment](#) (AT) case study.

18. (AT#1) What is the independent variable of this experiment? How many levels does it have? ([Ch. 1.F](#))

19. (AT#2) What is the dependent variable? On what scale (nominal, ordinal, interval, ratio) was it measured? ([Ch. 1.F](#))

Answers:

9) 76

10) 23, 277, 529

