Chapter 1 – *Introduction to Biostatistics*

Chapter Exercises

1.4.1. – 1.4.4. Answers will vary

Review Exercises

1. Descriptive statistics are used to describe a set of data, including such summary measures as the mean.

2. Inferential statistics are used to infer or predict information about a population based on data collected from a sample.

3. (a) – (l) These terms are defined in Section 1.2 of the text; (m) – (o) These terms are defined in Section 1.4 of the text.

4. The term measurement refers to the assignment of numbers to objects or events using a set of predefined rules.

5. The measurement scales are, in order of lowest to highest level: nominal, ordinal, interval, and ratio. The nominal scale is simply the naming of observations, and is used to describe categories of data. The ordinal scale is used to describe data that are ranked in a given order. The interval scale refers to data in which the distance between any two measurements is a known and measurable quantity, but where there is an arbitrary zero point on the scale of measurement. The ratio scale refers to data in which the ratio, as well as the distance, among measurements is known and measurable, and where there is a non-arbitrary zero point.

6. (a) quantitative, ordinal
    (b) qualitative, nominal
    (c) quantitative, ratio
    (d) qualitative, nominal
    (e) quantitative, interval ("zero degrees" of motion varies by instrumentation)
    (f) quantitative, interval

7. **Situation A.**

(a) 300 households   (b) all households in the small southern town

(c) number of school-aged children present   (d) number of households that reported one

or more children (e) nominal (categories: 0 children, 1 child, and so on)

Situation B.

(a) 250 patients   (b) all patients admitted to the hospital during the past year

(c) distance patient lives from the hospital   (d) 250 distances

(e) ratio

8. Situation A – (example answer) – stratify the town according to neighborhood size and then sample proportional to size of the neighborhood to achieve 300 households

Situation B – (example answer) – determine the total number of patient files available, randomly select a starting point within the filing system holding patient records, and select the 5th, 10th, 15th, etc. file until you reach 250 (the number of the file one chooses is based on the number that are available, per the example in the text).