CHAPTER 1

WHAT IS STATISTICS?

1. a. Interval
    b. Ratio
    c. Ratio
    d. Nominal
    e. Ordinal
    f. Ratio
    g. Nominal
    h. Ordinal
    i. Nominal
    j. Ratio   **(LO1-5)**

2. a. Ratio
    b. Ratio
    c. Ratio
    d. Ratio
    e. Ratio
    f. Ratio   **(LO1-5)**

3. Answers will vary   **(LO1-6)**

4. a. Sample
    b. Population
    c. Population
    d. Sample **(LO1-3)**

5. Qualitative data are not numerical, whereas quantitative data are numerical. Examples will vary by student.   **(LO1-4)**

6. A population is the entire group which you are studying. A sample is a subset taken from a population.   **(LO1-3)**

7. Discrete variables can assume only certain values,   whereas continuous variables can assume any value within a specific range. Examples will vary.   **(LO1-4)**

8. The cell phone provider is nominal level data. The minutes used are ratio level. Satisfaction is ordinal level.   **(LO1-5)**

9. If you were using one store as typical of all of the stores selling electronic book readers in the mall then it would be sample data. However, if you were considering all of the stores selling electronic book readers in the mall, then the data would be population data.   **(LO1-3)**

10. Various answers. **(LO1-5)**

11. Based on these findings, we can infer that 270/300 or 90 percent of the executives would move.   **(LO1-3)**

12. The clear majority of customers tested (400/500, or 80%) believe this take-out service is excellent. Based on these findings, we can expect a similar proportion of all customers to feel the same way. **(LO1-3)**

13. a   This year total sales = 1 000 772; last year total sales = 942 973; total sales increased about 6% from last year to this year.
   b.   Increases: Hockey Men's Finals by 19.9% and Hockey Women's by 23.5%.
It appears that there has been a significant shift within the market from last year to this year. **(LO1-3)**

14. a.   qualitative   **(LO1-4)**
   b.   nominal   **(LO1-5)**

15. a.   quantitative   **(LO1-4)**
   b.   discrete   **(LO1-4)**
   c.   interval   **(LO1-5)**

16. a.   quantitative   **(LO1-4)**
   b.   discrete   **(LO1-4)**
   c.   ratio   **(LO1-5)**

17. a.   quantitative   **(LO1-4)**
   b.   discrete   **(LO1-4)**
   c.   ratio   **(LO1-5)**

18. sample   **(LO1-3)**

19. a.   quantitative   **(LO1-4)**
   b.   continuous   **(LO1-4)**
   c.   ratio   **(LO1-5)**

20. population   **(LO1-3)**

21. sample   **(LO1-3)**

22. a.   qualitative   **(LO1-4)**
   b.   nominal   **(LO1-5)**

23. a.   qualitative   **(LO1-4)**
   b.   nominal   **(LO1-5)**

24. a.   A sample is used because it is difficult to locate every student.
   b.   A population is employed because the information is easy to find.
   c.   A population is used because the information is easy to find.
   d.   A sample works because it is difficult to locate every musical.   **(LO1-3)**

25. a.   continuous, quantitative, ratio
   b.   discrete, qualitative, nominal
   c.   discrete, quantitative, ratio
   d.   discrete, qualitative, nominal
   e.   continuous, quantitative, interval

      f.   continuous, quantitative, interval
      g.   discrete, qualitative, ordinal
      h.   discrete, qualitative, ordinal
      i.   discrete, quantitative, ratio   **(LO1-4 & 1-5)**

26.   a.   Qualitative: style and pool
         Quantitative: list price, number of bedrooms, full bathrooms, square feet and walk score   **(LO1-4)**
      b.   Nominal: style, pool
         Interval: walk score
         Ratio: list price, number of bedrooms, full bathrooms and square feet **(LO1-5)**

27.   a.   Qualitative: region
         Quantitative: average house prices   **(LO1-4)**
      b.   Nominal: region
         Ratio: average house prices   **(LO1-5)**

28.   a.   Qualitative: province and year; quantitative: average weekly earnings   **(LO1-4)**
      b.   Province is nominal; year is ordinal; average weekly earnings is ratio. **(LO1-5)**