Getting Ready for the Midterm – Chapter 1

Practice Problems – Answer Key

Here are the number of homicide arrests of juveniles age 18 and under in the United States for the years from 1993 through 1997. (Justice Department)

Year	1993	1994	1995	1996	1997
Arrests	3284	3102	2560	2172	1731

Determine whether the following statements are descriptive, and which are inferential. Explain the reasoning behind your choice, in your own words.

1) The number of homicide arrests of juveniles declined each year.

Descriptive, because we can verify that the number of arrests declined each year.

2) A government program is responsible for the decline in arrests.

Inferential, because we were not told that this is true.

Here are the test scores for two students in a statistics class.

Student	Test 1	Test 2	Test 3	Test 4	Test 5
Alycia	85	88	83	86	85
Kevin	73	78	81	84	84

Determine whether the following statements are descriptive, and which are inferential. Explain the reasoning behind your choice, in your own words.

3) Alycia's score on the final exam will be higher than Kevin's.

Inferential, because even though this is likely, we do not know for sure.

4) Kevin's average for these five tests is 80 points.

Descriptive, because we can verify this is true.

Determine whether the following data is nominal-level, ordinal-level, interval-level or ratio-level data.

5) The colors of the marshmallows in a box of cereal   ***Nominal (Categorical, no order)***

6) A college student's degree (Associate's, Bachelor's, Master's, etc.)   ***Ordinal (Categorical, can be ordered)***

7) Temperatures of beers from a tap (°C)   ***Interval (Numerical, can be negative)***

8) Weight of a college student   ***Ratio (Numerical, cannot be negative)***

9) Letter grades on an exam (A, B, C, D, F)   ***Ordinal (Categorical, can be ordered)***

10) Percentage grade on an exam   ***Ratio (Numerical, cannot be negative)***

11) Elevations of U.S. National Parks, in feet above/below sea level   ***Interval (Numerical, can be negative)***

12) Major in college (Mathematics, Biology, Psychology, etc.)   ***Nominal (Categorical, no order)***

For the following scenarios, determine which sampling technique was used.

13) Percentage of 18- to 25-year-olds who used drugs during the past 30 days: At a shopping mall, people who appear to be in the proper age group are stopped and asked for their age and whether they've used drugs in the past 30 days.   ***Convenience Sampling***

14) Percentage of Master's degrees in Mathematics earned by females: Several universities are selected at random and asked for the number of Master's degrees awarded in Mathematics, and how many were awarded to females.   ***Cluster Sampling (The clusters are the different universities.)***

15) Average SAT score for females compared to males: Fifty students are randomly selected from a University's list of students. Their gender and SAT scores are recorded.   ***Random Sampling***