Identifying Types of Data and Statistics

1. Identify each variable as quantitative or qualitative (1 point each):

    1. Amount of time it takes to assemble a simple prize: quantitative, since time is measured
    2. Number of students in a first-grade classroom: quantitative, since students are counted
    3. Rating of a newly elected politician: qualitative, since rating is not numerical and cannot be counted
    4. State in which a person lives: qualitative, since state name is not numerical and cannot be counted

2. identify the following quantitative variables as discrete or continuous:

    1. Population in a particular area of the United States: discrete, since population is counted
    2. Weight of newspapers recovered for recycling on a single day: continuous, since weight is measured
    3. Time to complete a sociology exam: continuous, since time is measured
    4. Number of consumers in a poll of 1000 who consider nutritional labeling on food products important: discrete, since number of consumers is counted

3. A medical researcher wants to estimate the survival time of a patient after the onset of a particular type of cancer and after a particular regimen of radiotherapy.

    1. What is the variable of interest to the medical researcher? The survival time of the patient, since that is what the medical researcher wants to estimate
    2. Is the variable in part A qualitative, quantitative discrete, or quantitative continuous? quantitative continuous, since time is a number (quantitative) and continuous (measured)

4. Fifty people are grouped into four categories – A, B, C, and D – and the number of people who fall into each category is shown in the table:

    1. What is the variable being measured? Is it qualitative or quantitative? Quantitative, since the data is numerical

5. The 1960s generation was never as radical as it was portrayed. According to an opinion poll in The American Enterprise, when a group of 30-40-year-olds were asked to describe their political views in the 1960s and early 1970s, they gave these responses:

    1. Is the variable qualitative or quantitative? Quantitative, because the data is a portion of the population

Part 2

1. This July, the US House of Representatives voted to cut taxes for American citizens.
    1. How would you classify the record of the vote in the 435-member House; is it a descriptive statistical study or an inferential statistical study? Descriptive statistical study, because you are collecting data you know and not making any inferences on it.
    2. A poll asks 435 citizens whether they want the tax cut bill passed. Is this study descriptive or inferential? Inferential, because you are assuming that the entire population has the same views as these 435 citizens.
2. National Geographic Magazine (July, 1999) published an article called "The Shrinking World of Hornbills." (Hornbills are a genus of birds including 54 species.) Suppose you're a naturalist studying these birds. Please answer the following questions about your study of hornbills.
    1. If you were to study the total number of eggs produced in one month by female Red-Knobbed Hornbills, would your variable (number of eggs) be categorical, discrete quantitative, or continuous quantitative? (3 points) I would classify the variable as discrete quantitative, because the data is counted and there are no values between whole numbers. (You can't have half an egg.)
    2. If you wanted to know the weights of the eggs produced by Red-Knobbed Hornbills, would that variable (weight) be categorical, discrete quantitative, or continuous quantitative? (3 points) I would classify the data as continuous quantitative as weight is a measured quantity and there can be decimal values.