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Technical but Important: Five More Basic Principles

SOLUTIONS

- For each of the following topics, indicate whether the variable or variables used to measure it are continuous or categorical, and single or multiple response.
 - Categorical, single-response.
 - Continuous, single-response.
 - Continuous, multiple-response.
 - Categorical, multiple-response.
 - Continuous, single-response.
 - Categorical, multiple-response.

3. “Squeeky the mouse solved the maze in an average of 10.4 seconds over nine trials.”

5. All measurements must be converted into consistent units (scale and system of measurement). I chose to convert all measurements to kilograms, using the conversion factor 2.2 pounds/kilogram (see revised table 4A). “Of the four specimens compared here, specimen 3 is the heaviest (0.70 kilograms). It is about twice as heavy as the lightest (specimen 4, 0.34 kg.). The other two specimens were about 70% as heavy as specimen 3.”

Table 4A. Mass of four specimens

Specimen	Weight (original units)	Weight (kg.)
1	1.2 lbs.	0.54
2	500 grams	0.50
3	0.7 kilograms	0.70
4	12 ounces	0.34

- Identify pertinent standards or cutoffs and other information needed to answer each of the following questions.
 - Speed limit where he was driving and his actual speed.
 - The weight-bearing capacity of the alloy (in weight per unit area) and the expected weight load (again, in weight per area) in the library.
 - Her current height and a growth chart (height for age) for girls.
 - Leah’s height and the minimum height requirement for the Ferris wheel.

- e. The rate of inflation, current tuition, and rates of tuition increase at Public U over the past few years.
 - f. Today's ozone measurement and the cutoff for an ozone warning.
- 9.
- a. Taken together, the two statements imply that 1 in 125,000 Americans are HIV positive and know it, clearly a misstatement of the facts.
 - b. Rewrite the second statement to clarify the intended meaning.
 - i. "Half of HIV-positive Americans know they are infected."
 - ii. "1 in 500 Americans is HIV positive and knows it."