

**Topic:** One-way tables

**Question:** Which variable would be measured at the interval level?

**Answer choices:**

- A      Age
- B      Race
- C      Temperature in Fahrenheit or Celsius
- D      Level of satisfaction



**Solution: C**

Temperature in Fahrenheit and Celsius is measured at the interval level because the interval change between each degree is equal, but the temperature scale doesn't have an absolute zero.

Age is measured at the ratio level because it also has a true zero.

Race is nominal data because it's a categorical variable and can take on only non-numerical values. Each value would represent a different category of the variable.

Level of satisfaction is also represented by categories, but those categories have a defined order, which means this variable is measured at the ordinal level.



**Topic:** One-way tables

**Question:** Which of the following is a categorical variable?

**Answer choices:**

- A      The screen size of a cell phone, in inches
- B      A customer's age, by age group (toddler, child, preteen, teen, adult)
- C      The cost of an item, in dollars
- D      The amount of electrical current in a wire



**Solution: B**

A categorical variable is a variable that uses words for variable names. They're non-numerical variables, which means they're not used for measurement or calculations.

A customer's age, by age range, would be considered categorical because we're calling them a toddler, child, preteen, and adult, even though age could be considered a number.

A quantitative variable uses numerical measurements. Inches, dollars and electrical current are all numerical amounts.



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**Question:** A customer is comparing the fuel economy of different half-ton pickup trucks before making a purchase. Which variables are categorical?

Vehicles	Engine	HP / lb-ft	City MPG	Hwy. MPG	Comb. MPG
Chevy Silverado	4.3L V-6	285 / 305	18	24	20
Chevy Silverado	5.3L V-8	355 / 383	16	23	19
Ford F-150	3.7L V-6	302 / 278	17	23	19
Ford F-150 EB	3.5L V-6 TT	365 / 420	16	22	18
Ram 1500 HFE	3.6L V-6	305 / 269	18	25	21
Ram 1500 ED	3.0L V-6 TD	240 / 420	18	28	23
Toyota Tundra	4.0L V-6	270 / 278	16	20	17
Toyota Tundra	4.6L V-8	310 / 327	15	19	16

### Answer choices:

- A The engine type
- B Horse power and pounds per foot
- C All of the MPG variables
- D All of the answer choices are quantitative



**Solution: A**

Categorical data divides things into categories. Even though engine type is reported as a number, these numbers are types of engines, so this variable is categorical.

The other variables are measurements, so they're quantitative variables.

HP / lb-ft means Horsepower and pounds per foot, which is a measurement of energy that can be converted to watts. MPG means miles per gallon and is also a measurement.

