1. **Protecting wood** How can we help wood surfaces resist weathering, especially when restoring historic wooden buildings? In a study of this question, researchers prepared wooden panels and then exposed them to the weather. Here are some of the variables recorded: type of wood (yellow poplar, pine, cedar); type of water repellent (solvent-based, water-based); paint thickness (millimeters); paint color (white, gray, light blue); weathering time (months). Identify each variable as categorical or quantitative.

Categorical: type of wood, type of water repellent, paint color

Quantitative: paint thickness, weathering time

3. **A class survey** Here is a small part of the data set that describes the students in an AP Statistics class. The data come from anonymous responses to a questionnaire filled out on the first day of class.

Gender	Hand	Height (in)	Homework time (min)	Favorite music	Pocket change (cents)
F	L	65	200	Hip-hop	50
M	L	72	30	Country	35
M	R	62	95	Rock	35
F	L	64	120	Alternative	0
M	R	63	220	Hip-hop	0
F	R	58	60	Alternative	76
F	R	67	150	Rock	215

(a) What individuals does this data set describe?

AP Stats students who completed the questionnaire on the 1st day of school

(b) Clearly identify each of the variables. Which are quantitative? In what units are they measured?

Categorical: Gender, Hand, Favorite Music
Quantitative: Height (in), HW Time (min), pocket change (cents)

(c) Describe the individual in the highlighted row.

Female who is right handed, 58 inches tall, who spends 60 min on hw, her favorite music is alternative, and has 76 cents in her pocket.

5. **Ranking colleges** Popular magazines rank colleges and universities on their "academic quality" in serving undergraduate students. Describe two categorical variables and two quantitative variables that you might record for each student. Give the units of measurement for the quantitative variables.

Categorical: Type of school (2year or 4 year university)
Major/Minor
Region of Country

Quantitative: GPA (4.0 scale), # credit hours each year (hours), graduation rate (% of Students)

Multiple choice: Select the best answer.

Exercises 7 and 8 refer to the following setting. At the Census Bureau Web site, you can view detailed data collected by the American Community Survey. The table below includes data for 10 people chosen at random from the more than one million people in households contacted by the survey. "School" gives the highest level of education completed.

Weight (lb)	Age (yr)	Travel to work (min)	School	Gender	Income last year ($)
187	66	0	Ninth grade	1	24,000
158	66	n/a	High school grad	2	0
176	54	10	Assoc. degree	2	11,900
339	37	10	Assoc. degree	1	6,000
91	27	10	Some college	2	30,000
155	18	n/a	High school grad	2	0
213	38	15	Masters degree	2	125,000
194	40	0	High school grad	1	800
221	16	20	High school grad	1	2,500
193	11	n/a	Fifth grade	1	0

7.   The individuals in this data set are
      (a) households.
      (b) people.
      (c) adults.
      (d) 120 variables.
      (e) columns.

8.   This data set contains
      (a) 7 variables, 2 of which are categorical.
      (b) 7 variables, 1 of which is categorical.
      (c) 6 variables, 2 of which are categorical.
      (d) 6 variables, 1 of which is categorical.
      (e) None of these.