

HW 1.0A - Introduction – Exploring Data: Answer all of the questions below. These questions are from The Practice of Statistics, 5th Edition (pages 6-7) which will be our textbook.

1. How can we help wood surfaces resist weathering, especially when restoring historic wooded 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, cedar, pine); type of water repellent (solvent-based, water-based); paint thickness (millimeters); paint color (grey, light blue, white); weathering time (months). *Identify each variable as categorical or quantitative.*

4. **Coaster Craze:** Many people like to ride roller coasters. Amusement parks try to increase attendance by building exciting new coasters. The following table displays data on several roller coasters that were opened in a recent year.

Coaster	Type	Height (ft)	Design	Speed (mph)	Duration (sec)
Wild Mouse	Steel	49.3	Sit	28	70
Terminator	Wood	95	Sit	50.1	180
Manta	Steel	140	Stand	56	155
Prowler	Wood	102.3	Sit	51.2	150
Diamondback	Steel	230	Sit	80	180

- What individuals does this data set describe?
- What variables are measured? Identify them as categorical (C) or quantitative (Q).
- Use a few sentences to describe the individual in the fourth row.

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 institution.

Use the following table of data to answer questions 7 and 8 below. At the U. S. Census Bureau Web site (www.census.gov), you can view detailed data collected by the American Community Survey. The following table includes data for 10 people chosen at random from the more than 1 million people 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	9 th grade	1	24,000
158	66	n/a	HS grad	2	0
176	54	10	Assoc deg	2	11,900
339	37	10	Assoc deg	1	6,000
91	27	10	Some college	2	30,000
155	18	n/a	HS grad	2	0
213	38	15	MS deg	2	125,000
194	40	0	HS grad	1	800
221	10	20	HS grad	1	2,500
193	11	n/a	5 th 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, 2 of which is categorical
- E) None of the above