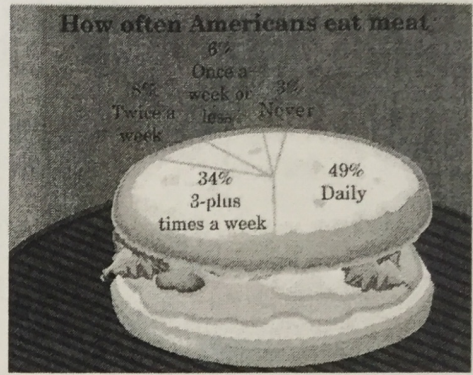


1.) According to a USA Today snapshot, about 3% of Americans never eat meat. A pie chart presented in the snapshot shows 49% eat meat daily, 34% eat meat latest three times a week, 8% eat meat twice per week, and 6% eat meat once per week or less.



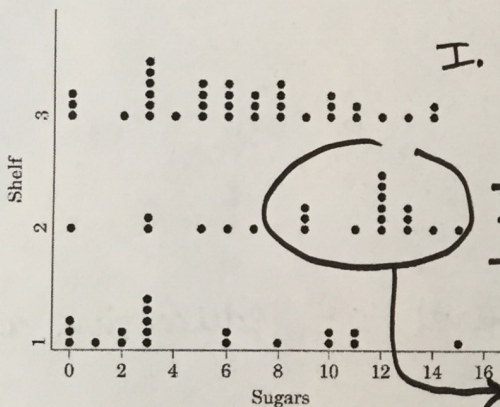
a.) What would be a reasonable question of interest?
How often do Americans eat meat?

b.) Do you think these results were obtained using an observational study or an experiment?

c.) Who are the individuals in this study? What variable was measured? Is the variable categorical or quantitative?
Individuals: Americans

Variable: how often do you eat meat in a week

2.) Researchers collected data on 77 brands of cereal at a local supermarket. For each brand, the values of several variables are recorded and the shelf in the store on which the cereal was located (1 = bottom, 2 = middle, 3 = top). Here is a dotplot of the data on sugar content and shelf. Critics claim that supermarkets tend to put sugary kids' cereal on lower shelves where the kids can see it. Do the data from this study support this claim? Follow the four-step statistical problem-solving process.



I. Do supermarkets tend to put sugary kids' cereal on lower shelves where they can see it?
II. Data on 77 brands collected
III. dotplot on left analyzes sugar
IV. Question of interest appears to be supported, especially on the 2nd shelf, there are more sugary cereals.

3.) Do Major League Baseball games take less time now than they did last season? To try to answer this question, you obtain data on the lengths of all games played in each of the two seasons. Since there were thousands of games played each season, you decide to select the first 100 games played in each of the two seasons. Then, you compute the average game length for this season and for last season.

(a) Is this an experiment or an observational study? Observational

(b) Describe the population(s) of interest and the sample(s) chosen in this situation.

Population: all Major League Baseball games

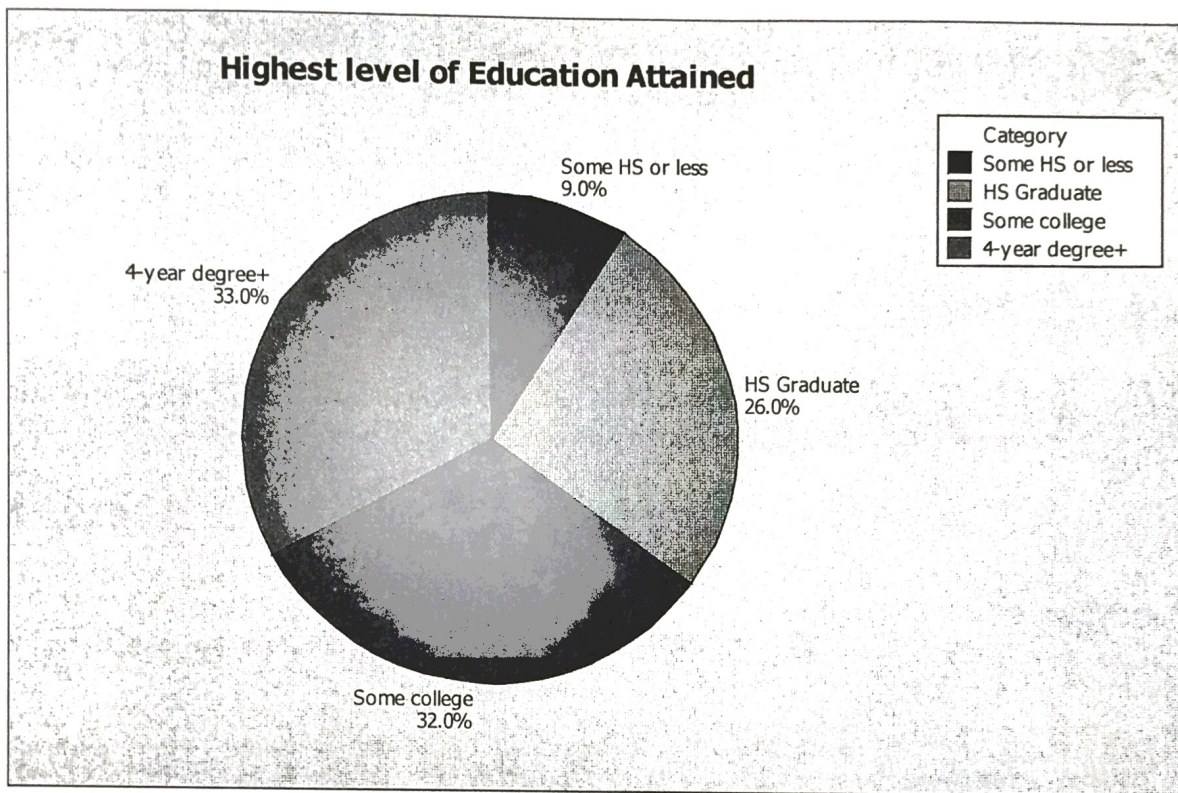
Sample: 1st 100 games played in two seasons

(c) Do you think the sample(s) chosen will provide accurate information about the lengths of baseball games? Why or why not?

Since only the first 100 games out of thousands were analyzed, the ~~data~~ data is not as accurate.

This study will provide an interesting spring-board for a more well designed sample in the future.

- 4.) In a recent survey of members of the American Association of Retired Persons, about 9% stated they had attained less than a high school diploma. The pie chart below also indicates that 26% were high school graduates, 32% had some college, and 33% possessed at least a 4-year degree.



- (a) What was a reasonable question of interest in this case?

what is the highest level of education attained?

- (b) Do you think these results were obtained using an observational study or an experiment? Explain.

- Observational study (sample survey)
- No treatments imposed

- (c) Who are the individuals in this study? What variable was measured? Is the variable categorical or quantitative?

Individuals: Retired Americans

Variable: level of education attained (categorical)

- (d) What percent of the sample have at least some college in their background?

32%