

# REVIEW QUESTIONS

The *Monitoring the Future Study* is a major source of information on smoking, drinking and drug habits of American youth. Based on data collected from the 2011 survey, you will decide whether or not smoking is linked to gender or if there is a linkage between high school grades and alcohol consumption. The review questions will focus on data collected from the following three survey questions:

- I. On how many occasions (if any) have you had alcoholic beverages to drink – more than just a few sips during the last 30 days?
- II. Have you ever smoked cigarettes?
- III. Which of the following best describes your average grade so far in high school?

Question 1 explores the relationship between Smoking (Question II) and Gender. Results from these questions from students who answered both questions appear in Table 13.14. (You may notice that the overall total in this table differs from the overall total in Table 13.12. Some students chose not to respond to certain questions.)

		Smoking				
		Never	Once or twice	Occasionally/ not regularly	Regularly in past	Regularly now
Gender	Female	4244	1228	649	253	428
	Male	3957	1182	793	337	543

Table 13.14. Results from questions on gender and smoking.

1. a. Copy Table 13.14 and add a row to the bottom and a column to the right. Label the added row and column “Total” and enter the marginal totals.
- b. Are male or female 12th grade students more likely to never have smoked? Support your answer with appropriate percentages. Show the calculations.
- c. Create a bar chart representing the conditional distribution of Smoking for each gender. Label each bar with its corresponding percentage. (Round percentages to one decimal.)

Questions 2 – 4 explore relationships between grades in high school and smoking. Responses to survey questions II and III have been organized into the Table 13.15.

		Smoking				
		Never	Once or twice	Occasionally/ not regularly	Regularly in past	Regularly now
Grades	D	46	22	23	12	25
	C-, C, or C+	926	436	323	123	285
	B-, B, or B+	3792	1275	769	330	489
	A- or A	3465	665	327	126	168

Table 13.15. Responses to questions on grades and smoking.

2. a. How many students answered both the question on grades and the question on smoking?
  - b. What percentage of students answering both questions had never smoked? Had smoked at least once?
  - c. What percentage of students had average grades of A- or A and never smoked? Show the calculations. (Round answer to one decimal.)
3. a. What percentage of A- or A students have never smoked? Show the calculations.
  - b. What percentage of students' whose averages are C+ or below never smoked? Show the calculations.
4. Next, you will examine the relationship between Smoking status and having a B- average or better.
    - a. What percentage of students who are regular smokers had averages B- or better?
    - b. What percentage of students who were regular smokers in the past had averages B- or better?
    - c. What percentage of students who never smoked had averages B- or better?
5. The graphic display in Figure 13.3 represents the conditional distribution of alcohol usage for each level of Grade. The conditional percentages (rounded to the nearest percent) appear above each bar.

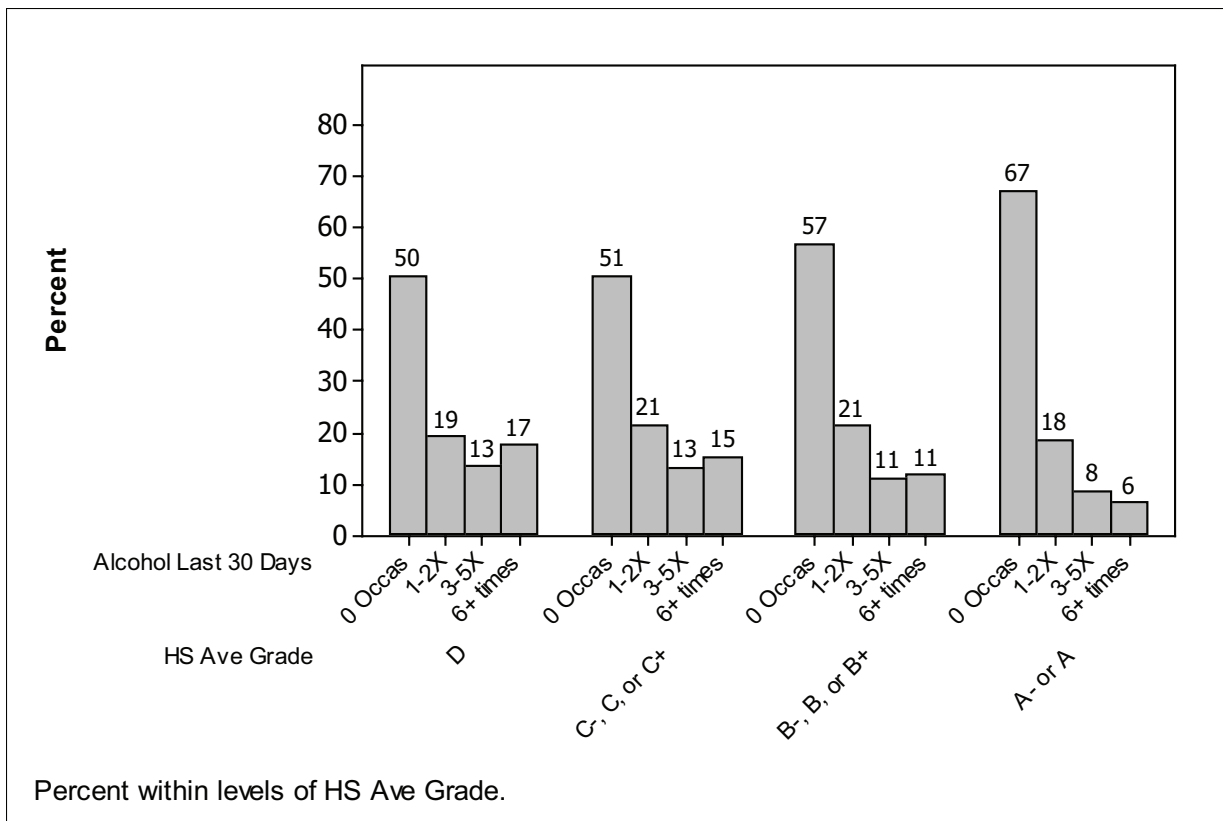


Figure 13.3. Conditional distributions of Alcohol for each level of GPA.

- Do the conditional percentages for each level of Grades sum to 100%? If not, explain why they might not sum to 100%.
- Write a brief description of alcohol usage among the different levels of Grades. What relationship, if any, can you find between alcohol usage and grades?