

Chapter 2, revisited

15. Magnet schools An article in the Winter 2003 issue of *Chance* magazine reported on the Houston Independent School District's magnet schools programs. Of the 1755 qualified applicants, 931 were accepted, 298 were wait-listed, and 526 were turned away for lack of space. Find the relative frequency distribution of the decisions made, and write a sentence describing it.

16. Magnet schools again The *Chance* article about the Houston magnet schools program described in Exercise 15 also indicated that 517 applicants were Black or Hispanic, 292 Asian, and 946 White. Summarize the relative frequency distribution of ethnicity with a sentence or two (in the proper context, of course).

31. Magnet schools revisited The *Chance* magazine article described in Exercise 15 further examined the impact of an applicant's ethnicity on the likelihood of admission to the Houston Independent School District's magnet schools programs. Those data are summarized in the table below.

		Admission Decision			Total
		Accepted	Wait-Listed	Turned Away	
Ethnicity	Black/Hispanic	485	0	32	517
	Asian	110	49	133	292
	White	336	251	359	946
	Total	931	300	524	1755

- What percent of all applicants were Asian?
- What percent of the students accepted were Asian?
- What percent of Asians were accepted?
- What percent of all students were accepted?

35. **Weather forecasts** Just how accurate are the weather forecasts we hear every day? The following table compares the daily forecast with a city's actual weather for a year:

		Actual Weather	
		Rain	No Rain
Forecast	Rain	27	63
	No Rain	7	268

- On what percent of days did it actually rain?
 - On what percent of days was rain predicted?
 - What percent of the time was the forecast correct?
 - Do you see evidence of an association between the type of weather and the ability of forecasters to make an accurate prediction? Write a brief explanation, including an appropriate graph.
37. **Blood pressure** A company held a blood pressure screening clinic for its employees. The results are summarized in the table below by age group and blood pressure level:

		Age		
		Under 30	30–49	Over 50
Blood Pressure	Low	27	37	31
	Normal	48	91	93
	High	23	51	73

- Find the marginal distribution of blood pressure level.
- Find the conditional distribution of blood pressure level within each age group.
- Compare these distributions with a segmented bar graph.
- Write a brief description of the association between age and blood pressure among these employees.
- Does this prove that people's blood pressure increases they age? Explain.