

Section 1.1

The Pew Research Center asked a random sample of 2024 adult cell phone owners from the United States which type of cell phone they own: iPhone, Android, or other (including non-smart phones). Here are the results, broken down by age category.

<http://pewinternet.org/Reports/2013/Smartphone-Ownership-2013.aspx>

	18-34	35-54	55+	Total
iPhone	169	171	127	467
Android	214	189	100	503
Other	134	277	643	1054
Total	517	637	870	2024

1. Use the cell phone data to calculate the marginal distribution (in percents) of type of cell phone.
2. Make a graph to display the marginal distribution. Describe what you see.
3. Use the cell phone data to calculate the conditional distribution of cell phone type for the 18- to 34-year-olds.
4. Based on the cell phone data, is there evidence of a difference in the distribution of cell phone ownership for the three age groups? Justify your answer.

Super Powers

A sample of 200 children from the United Kingdom ages 9-17 was selected from the CensusAtSchool website (www.censusatschool.com). The gender of each student was recorded along with which super power they would most like to have: invisibility, super strength, telepathy (ability to read minds), ability to fly, or ability to freeze time. Here are the results:

	Female	Male	Total
Invisibility	17	13	30
Super Strength	3	17	20
Telepathy	39	5	44
Fly	36	18	54
Freeze Time	20	32	52
Total	115	85	200

- (a) Use the data in the two-way table to calculate the marginal distribution (in percents) of superpower preferences.
- (b) Make a graph to display the marginal distribution. Describe what you see.
- (c) Calculate the conditional distribution of responses for the males and females and make a segmented bar graph to compare the responses between males and females.
- (d) Based on this data, can we conclude that boys and girls differ in their preference of superpower? Give appropriate evidence to support your answer.

What Personal Media Do You Own?

Here are the percent of 15-18 year olds that own the following personal media devices, according to the Kaiser Family Foundation:

Device	Percent who Own
Cell Phone	85%
MP3 Player	83%
Handheld Video Game Player	41%
Laptop	38%
Portable CD/Tape Player	20%

- (a) Make a well-labeled bar graph to display the data. Describe what you see.
- (b) Would it be appropriate to make a pie chart for these data? Why or why not?