

SPSS

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Chips	40	11.00	19.00	30.00	23.9500	2.55152	6.510
Valid N (listwise)	40						

JMP

Mean	23.95
Std Dev	2.5515204
Std Err Mean	0.4034308
Upper 95% Mean	24.766016
Lower 95% Mean	23.133984

3-2 Basic Skills and Concepts

Statistical Literacy and Critical Thinking

1. Employment Data Listed below are results from the National Health and Nutrition Examination.

1 3 3 2 1 1 1 7 9 1 1 1 4 4

These results indicate the working status of the person being surveyed, and the listed values represent these responses: 1 = Working; 2 = With a job but not at work; 3 = Looking for work; 4 = Not working; 7 = Refused to answer; 9 = Don't know. Does it make sense to calculate the mean of these numbers? Why or why not?

2. Average The web site IncomeTaxList.com lists the “average” annual income for California as \$44,400. What is the role of the term *average* in statistics? Should another term be used in place of *average*?

3. Median In an editorial, the *Poughkeepsie Journal* printed this statement: “The median price—the price exactly in between the highest and lowest— . . .” Does that statement correctly describe the median? Why or why not?

4. Measures of Center In what sense are the mean, median, mode, and midrange measures of “center”?

In Exercises 5–20, find the (a) mean, (b) median, (c) mode, and (d) midrange for the given sample data. Express answers with the appropriate units of measurement. Then answer the given questions.

5. Top 10 Celebrity Incomes Listed below are the earnings (in millions of dollars) of the celebrities with the 10 highest incomes in a recent year. The celebrities in order are Steven Spielberg, Howard Stern, George Lucas, Oprah Winfrey, Jerry Seinfeld, Tiger Woods, Dan Brown, Jerry Bruckheimer, J. K. Rowling, and Tom Cruise. Can this “Top 10” list be used to learn anything about the mean annual earnings of all celebrities?

332 302 235 225 100 90 88 84 75 67

6. Top 10 Most Expensive Colleges Listed below are the annual tuition amounts of the 10 most expensive colleges in the United States for a recent year. The colleges listed in order are Sarah Lawrence, NYU, George Washington, Bates, Skidmore, Johns Hopkins, Georgetown, Connecticut College, Harvey Mudd, and Vassar. What does this “Top 10” list tell us about the population of all U.S. college tuitions?

\$54,410 \$51,991 \$51,730 \$51,300 \$51,196
\$51,190 \$51,122 \$51,115 \$51,037 \$50,875

7. Car Crash Test Measurements Listed below are head injury measurements from small cars that were tested in crashes. The measurements are in “hic,” which is a measurement of a standard “head injury criterion.” The data are from Data Set 13 in Appendix B, which is based on data from the National Highway Traffic Safety Administration. The listed values correspond to these cars: Chevrolet Aveo, Honda Civic, Volvo S40, VW Jetta, Hyundai Elantra,