Name:

Elementary Statistics **HW 3.2—part 1**

1. Listed below are results from the National Health and Nutrition examination. 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, and 9 = don't know.

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

Does it make sense to calculate the mean of these numbers? Why or why not?

2. The website 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. 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.

332 302 235 225 100 90 88 84 75 67

Find the mean, median, mode, and midrange for the given sample data. Express answers with the appropriate units of measurement. Can this "Top 10 list" be used to learn anything about the mean annual earnings of all celebrities?

4. The National Highway Traffic Safety Administration conducted crash tests of child booster seats for cars. Listed below are results from those tests, with the measurements given in "hic" which is a measurement of a standard "head injury criterion." According to the safety requirement, the hic measurement should be less than 1000 hic.

774 649 1210 546 431 612

Find the mean, median, mode and midrange. Express your answers with the appropriate units of measurement. Do the results suggest that all child booster seats meet the specified requirement?

5. Listed below are the lengths of time (in years) it took for a random sample of college students to earn bachelor's degrees (based on data from the National Center for Education Statistics).

4	4	4	4	4	4	4.5	4.5	4.5	4.5
4.5	4.5	6	6	8	9	9	13	13	15

Find the mean, median, mode, and midrange for the given sample data. Express answers with the appropriate units of measurement. Based on these results, does it appear that it is common to earn a bachelor's degree in 4 years?

6. Waiting times (in minutes) of customers at the Jefferson Valley Bank (where customers enter a single waiting line) and the Bank of Providence (where customers wait in individual lines at three different teller windows are listed below.

Jefferson Valley (single line): 6.5 6.6 6.7 6.8 7.1 7.3 7.4 7.7 7.7 7.7

Providence (individual lines): 4.2 5.4 5.8 6.2 6.7 7.7 7.7 8.5 9.3 10.0

Find the mean and the median for the two samples. Then compare the two sets of results. Determine whether there is a difference between the two data sets that is not apparent from a comparison of the measures of center. If so, what is it?

7. Below are the IQ scores from 20 identical twins (Data set 6 in Appendix B):

96	89	87	87	101	103	103	96	127	126
101	96	93	88	94	85	97	114	113	124

IQ tests are designed so that the mean IQ of the population is 100. Find the mean and the median. Does the sample mean suggest that the sample is consistent with the population?