

Name:

Elementary Statistics

HW 3.4 – Part 2

1. The values of P_{50} , Q_2 , and the median are found for the net incomes reported on all individual 1040 tax forms filed for last year. What do those values have in common?

2. When Steve Jobs was Chief Executive Officer (CEO) of Apple, he earned an annual salary of \$1. The CEOs of the 50 largest U.S. companies had a mean salary of \$1,449,779 and a standard deviation of \$527,651 (based on data from USA Today).
 - a. What is the difference between Jobs' salary and the mean CEO salary?

 - b. How many standard deviations is that (the difference found in part (a))?

 - c. Convert Steve Jobs' salary to a z score.

 - d. If we consider "usual" salaries to be those that convert to z scores between -2 and 2, is Steve Jobs' salary usual or unusual?

3. Based on data from Data Set 17 in Appendix B, the words spoken in a day by women have a mean of 16,215 words and a standard deviation of 7,301 words. Consider the women with an unusual word count in a day. What are the numbers of words that separate the unusual word counts from those that are usual?

4. Based on Data Set 1 in Appendix B, males have red blood cell counts with a mean of 5.072 and a standard deviation of 0.395, while females have red blood cell counts with a mean of 4.577 and a standard deviation of 0.382. Who has the higher count relative to the sample from which it came: A male with a count of 4.91 or a female with a count of 4.32? Explain.

5. Use the following duration times (seconds) of 24 eruptions of the Old Faithful geyser in Yellowstone National Park. The duration times are scored from lowest to highest. Find the percentile corresponding to the given time.

110	120	178	213	234	234	235	237	240	243	245	245
250	250	251	252	254	255	255	259	260	266	269	273

- a. 240 sec
- b. 260 sec
6. Use the same list of 24 sorted Old Faithful eruption duration times and find the indicated percentile.

110	120	178	213	234	234	235	237	240	243	245	245
250	250	251	252	254	255	255	259	260	266	269	273

a. P_{40}

b. P_{75}

c. P_{85}