**Class Assignment - Lesson 05**

1. Were you on time to class today? (3 Points)
2. Were you in class today? (6 points)
3. The magnitude of earthquakes since 1900 that measure 0.1 or higher on the Richter scale in California is approx. normally distributed, with a mean of 4.2 and a standard deviation of 0.5. Approx. 95% of all earthquakes would have a Richter scale number between what two values (1 pt)? **3.2 to 5.2**
4. Using the mean and standard deviation listed in problem 3, what percentage of earthquakes fall between 3.7 and 4.7 on the Richter scale (1 pt)? **Approx. 68%**
5. The great San Francisco Earthquake of 1906 had a magnitude of 7.9 on the Richter scale. What is the Z-Score of that earthquake (use the mean and std. dev. in problem 2)? Based on the Z-Score, was it extreme (1 pt)?  **EXTREME!!!!**

Suppose the talk time for a Motorola Cell Phone battery is normally distributed with mean (µ) 324 minutes and standard deviation (σ) of 24 minutes. Use this information to complete problems 5-7.

1. (1 pt) What is the probability that a fully charged battery last less than 300 minutes? List your Z-Score and the probability that you would obtain based off of the Z-Score.

**Probability = 0.1587**

1. (1 pt) What is the probability that a fully charged battery last more than 340 minutes? List your Z-Score and the probability that you would obtain based off of the Z-Score.

**Probability = 0.2524**

1. (1 pt) What is the probability that a fully charged battery last between 290 and 330 minutes? List your Z-Score and the probability that you would obtain based off of the Z-Score.

**Probability = 0.599**

**Probability = 0.078**

**Probability 0.599-0.078=0.521**

1. (1 pt) Find the battery time that corresponds to the 90th Percentile.

**X= 324 + (24\*1.282) = 354.768**

1. (1 pt) The height of young adult males in the United States is normally distributed with a mean of 69.6 inches and a standard deviation of 2.7 inches. The heights of young adult females are normally distributed with a mean of 64.1 inches and a standard deviation of 2.6 inches. It seems to be part of the American culture that most women do not date men shorter than them and most men do not date women taller than them. Determine the percentage of men (or women) you would rule out of your “dating pool” if you are affected by this cultural bias. List your Z-Score and the probability that you would obtain based off of the Z-Score.

**Check to be sure they have a Z-Score and a probability.**