HOMEWORK #32: Z-Scores

1.) IPHONES have a lifespan of that is normally distributed with a mean of 2.3 years and a standard deviation of 0.4 years. What is the probability that your IPHONE will break down during APPLE's guarantee period of 2 years?

2.) POLICE DISPATCH TIME TO AN EMERGENCY CALL HAS A NORMAL DISTRIBUTION WITH A MEAN OF 8.4 MINUTES AND A STANDARD DEVIATION OF 1.7 MINUTES. FOR A RANDOM CALL,WHAT IS THE PROBABILITY THAT THE DISPATCH TIME IS BETWEEN 7 AND 10 MINUTES?

3. a.) The SAT Verbal in the country is normally distributed and has a mean of 510 and a standard deviation of 80. If you scored a 720 on the SAT VERBAL, what percent of test takers scored worse than you (i.e. what percentile are you in)?

b.) If you score a 470, what percentile are you in?

c.) What percent of test takers score between a 600 and 700?

d.) What score on the SAT verbal will land you in the 97th percentile?

4.) Sam figures that it takes an average (mean) of 27 minutes to get to school with a standard deviation of 6 minutes . Assume the distribution is normally distributed.

* One day it took Sam 22 minutes to get to school. How many standard deviations from the average is that? What percent of the time can Sam expect to make it to school in less than 22 minutes?
* What is the probability that it will take Sam more than 35 minutes to get to school? If Will leaves at 7:30AM what’s the probability that he makes it on time to school?

5.) CHECK YOUR PULSE QUESTION! USE THE DATA COLLECTED FROM THE CLASS TO FIND THE STANDARD DEVIATION, VARIANCE, AND MEAN OF THE PULSE OF THE CLASS.

a.) Draw a Normal Distribution representing the data (this should include 3 standard deviations to the left/right of the mean) and the percents corresponding with the different sections.

b.) What percent of pulses are more than 65 beats per minute (use the z-score)?