Math 3339   Name:

Quiz #8

Please, show your work and write legibly. If you use R, you must report the R command you are using with all relevant parameters. Please, round your results to 1 DECIMAL DIGIT

(1)[10 Pts] Here are the SAT scores of $n = 13$ mathematics SAT test scores:

$$665, 671, 667, 650, 645, 659, 632, 679, 632, 665, 629, 677, 661$$

(a) [2 Pts] Use the R command `mean` to compute the sample mean of the the SAT scores.

(b) [2 Pts Use the R command `var` compute the sample variance of the SAT scores.

(c) [3 Pts] Assuming that the scores are normally distributed, find a 99 percent confidence interval for the population mean μ.

(d) [3 Pts] Assuming that the scores are normally distributed and that the variance $\sigma^2 = 324$ is known, find the sample size n so that we are 99% confident that the estimate of $\bar{x}$ is within ± 10 unit of the true mean