Name:
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MATH 1342
Quiz 7.5

A statistics course with thousands of students has scores on an exam that are normally distributed. A pilot survey of 40 of these students are chosen at random, and for the sample, the scores on their exams are noted.

(1) If the standard deviation of the scores in the pilot survey was 9.6, then what should the minimum sample size be in order to construct a 95% confidence interval, for the population mean, that has a sampling error of 2?

(2) If the standard deviation of the pilot survey was not calculated, but instead the range of scores in the pilot survey where observed to be between 52 and 94, then what should the minimum sample size be in order to construct a confidence interval for the population mean with $\alpha = .01$ and sampling error of 2.5?

(3) If the population variance is known to 64 and a researcher determines that a desired sampling error, for estimating the population mean, of 1.5 can be achieved with a sample size of 154, then what was the confidence level (accurate to the nearest thenth of a percent)?