

STP226

Group work ch8.

There are 4 problems, turn the page for problems 3 and 4.

1. The 95% confidence interval for a mean price of hard cover books in a large book store is (\$14.75, \$37.95).

a) What was the sample mean?

b) What is the margin of error?

c) Suppose the population of all prices was normal with standard deviation  $\sigma = \$11.84$ , what sample size was used for CI?

2. A random sample of size 15 of delinquent charge accounts of certain large department store has mean of \$58.14. Assume that the population of all delinquent charge accounts in that store is normally distributed and the population standard deviation equals \$15.30.

a. Determine 80% confidence interval for the actual average size of delinquent charge accounts at this store (make sure to use proper procedure)

b. Based on your interval in part (a), do you think that it is likely that population mean is \$60?

3. You want to estimate the mean weight of all students in a large university. What should be the size of your sample, so that the 90% confidence interval for the real population mean weight will have a margin of error of no more than 5 lb? Assume that the population standard deviation is 20 lb. Assume also the normal distribution of all weights of the students at that university.

4. Test scores of all students in Mat 142 classes have a normal distribution. The following is a random sample of 4 test scores from that population:

63, 71, 80, 66

a. Determine 95% confidence interval for  $\mu$ , the true mean test score of all Mat142 students (make sure to use proper procedure)

b. Based on the interval you obtained in part a, is it likely that  $\mu$  is 84 or more?