

12. A doctor wants to estimate the HDL cholesterol of all 20- to 29-year-old females. How many subjects are needed to estimate the HDL cholesterol within 4 points with 99% confidence assuming $\sigma = 18.5$? Suppose the doctor would be content with 95% confidence. How does the decrease in confidence affect the sample size required?

A 99% confidence level requires subjects.
(Round up to the nearest whole number as needed.)

A 95% confidence level requires subjects.
(Round up to the nearest whole number as needed.)

How does the decrease in confidence affect the sample size required?

- ☐ A. The sample size is the same for all levels of confidence.
☐ B. The lower the confidence level the larger the sample size.
☐ C. The lower the confidence level the smaller the sample size.

13. Construct the indicated confidence interval for the population mean μ using (a) a t-distribution. (b) If you had incorrectly used a normal distribution, which interval would be wider?

$$c = 0.99, \bar{x} = 14.4, s = 4.0, n = 10$$

(a) The 99% confidence interval using a t-distribution is (,).
(Round to one decimal place as needed.)

(b) If you had incorrectly used a normal distribution, which interval would be wider?

- ☐ The normal distribution has the wider interval.
☐ The t-distribution has the wider interval.