

Exercise 8.9.8

A pharmaceutical company makes tranquilizers. It is assumed that the distribution for the length of time they last is approximately normal. Researchers in a hospital used the drug on a random sample of 9 patients. The effective period of the tranquilizer for each patient (in hours) was as follows: 2.7; 2.8; 3.0; 2.3; 2.3; 2.2; 2.8; 2.1; and 2.4 .

- a. i. $\bar{x}$ = _____
ii. s_x = _____

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- iii. n = _____
iv. $n - 1$ = _____
- b. Define the Random Variable X , in words.
c. Define the Random Variable $\bar{X}$, in words.
d. Which distribution should you use for this problem? Explain your choice.
e. Construct a 95% confidence interval for the population mean length of time.
i. State the confidence interval.
ii. Sketch the graph.
iii. Calculate the error bound.
- f. What does it mean to be "95% confident" in this problem?