

Fundamentals of Data Analysis: Assignment #7

Deadline: 12/08/2003 (Monday)

Please post to the mailbox next to the IS management office (2nd floor of IS building)

1. You have taken 11 data independently from a population obeying a Normal distribution, as follows:

7, 15, 4, 8, 9, 7, 6, 10, 12, 6, and 4

- Calculate the confidence interval of population mean (μ) with a confidence level of 95%.
- Do the following statistical test on the population mean at significant level $\alpha = 5\%$.

Null hypothesis: $\mu = 12$

Alternative hypothesis: $\mu < 12$

2. You measured the shoe size of 16 students, and got the following data.

25, 27, 22, 20, 27, 26, 24, 25, 20, 30, 27, 25, 29, 26, 22, and 25 (cm)

Assume that the shoe size obeys a Normal distribution. Test the hypothesis that “the mean of the shoe size is 27 cm” at significant levels $\alpha = 5\%$ and $\alpha = 1\%$.

3. You want to know whether or not taking a supplementary course on mathematics has any effect on understanding the computer programming. You divide the students taking computer programming course into two groups A and B at registration, where group A will take the supplementary course, and group B will not. At the end of the semester, you administer the same final test for both groups, and obtain the following data.

Group A: number = 29 , sample mean = 76 , estimated variance = 17

Group B: number = 31 , sample mean = 71 , estimated variance = 15

Run a test at significance level $\alpha = 5\%$.

4. Write your comments and requests on this lecture (if any).