Multiple Choice Questions

Chapter 11: Experimentation: Percentile Analysis

1. A percentile analysis should be used when:

    a. There are concerns about the validity of the model
    b. It is not possible to run multiple replications with the model in the time available
    c. There is only one scenario being considered
    d. The system being modelled will only be run once

2. From the results of 1,000 replications with a simulation model an analyst calculates that the 90^{th}-percentile for the number of units produced in a week is 2,374. How should this result be interpreted?

    a. There is a 90 percent probability that less than or equal to 2,374 units will be produced in a week
    b. There is a 90 percent probability that more than or equal to 2,374 units will be produced in a week
    c. There is a 90 percent probability that exactly 2,374 units will be produced in a week
    d. None of the above

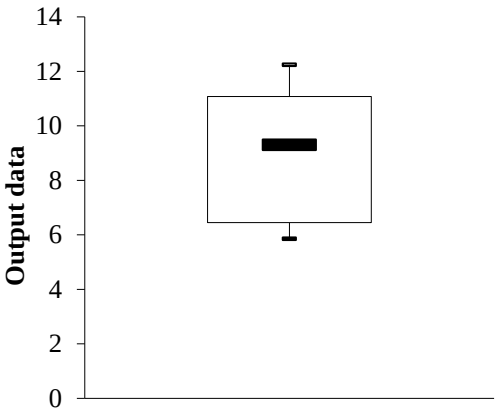
3. The results from ten replications with a model are as follows: 6.31, 5.40, 10.23, 8.39. 6.45, 7.00, 11.74, 12.74, 11.08, 10.45. What is the median of the data?

    a. 8.39
    b. 9.31
    c. 10.23
    d. 12.74

4. What is the 90^{th} percentile of the data in question 3?

    a. 12.14
    b. 12.24
    c. 12.34
    d. 12.44

5. Given the following box plot for the data in question 3, what approximately is the inter-quartile range?



a. 6.5
b. 5.5
c. 4.5
d. 3.5

6. What is the probability of achieving a value of less then or equal to 10 for the data in question 3?

a. 46.75%
b. 48.75%
c. 51.75%
d. 53.75%

7. For which of the following values can the empirical bootstrap procedure be used to determine a confidence interval?

a. The median
b. The 80th percentile
c. The mean
d. All of the above