

## Machine Production Records

Background on Case:

<http://www.mhhe.com/business/opsci/bstat/bryantcases/samplecase11.mhtml>

Data File: Prod.xls

As a statistician working for the manufacturing facility involved in the case, prepare a report for Helen. Although it may be informative to look at graphs, present only numerical results as well as your own observations about the data. Specifically:

- Present appropriate summaries of the day's production records. Present these descriptive statistics **without** omitting any outliers. If you believe that the results are influenced by outliers, indicate which observations are outliers and discuss the effects of these outliers on your results.
- Compare the machines' production rates with their official ratings. Identify any specific machines or machine types that appear to be performing poorly.
- For each machine type, test whether the average production differs from the official rating at the 5% level of significance. For this analysis, do not omit any outliers. Do you have to make any assumptions in order to conduct these tests? Are any statistically significant differences large enough to be practically significant?
- Indicate one potential problem with the data collection. Be specific.
- Given your findings, advise Helen on how to proceed.

Helen has a conceptual understanding of descriptive statistics and hypothesis testing, but she is very busy. Please limit the report to a maximum of 1.5 single-spaced pages. The report should look like something you would submit to a colleague, not like a homework assignment.