Exercise

# Concepts of Hypothesis Testing

Consider the following list of statements and designate which are true and which are false.

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| True | False | Statement |
|  |  | Creating a hypothesis to be tested is a step in the scientific method. |
|  |  | Hypothesis testing is normally used as a discovery process to create data for further analysis. |
|  |  | A hypothesis is written to describe the cause and effect relationship that is to be tested. |
|  |  | Hypothesis testing allows you to accept an assertion about a parameter in a data set based upon an analysis of a sample of the data. |
|  |  | When using the scientific method of inquiry, if an experiment is not valid, the hypothesis should be revised. |
|  |  | Hypothesis testing can be used to statistically demonstrate the before/after change in process performance based upon a change in the process design.  |
|  |  | Based upon the scientific method of inquiry, after a hypothesis is created, a question is posed to be answered that supports the hypothesis. |
|  |  | When using hypothesis testing for root cause analysis, the test will indicate if the factor being investigated is a contributing root cause. |
|  |  | Hypothesis testing is using data to demonstrate what we think we already know. |
|  |  | Hypothesis testing is able to test theoretical hypothetical questions, but cannot be used to test practical questions about process problems. |