Eruptions of Old Faithful

Using Data for Predictions

EVS 430: Advanced Quantitative Methods

Tourists flock to Yellowstone National Park, anxiously awaiting the next eruption of Old Faithful, a national landmark, a geyser known for faithfully erupting on a regular schedule. As the time for the next eruption approaches, the paved area and benches surrounding Old Faithful are filled with excited people. If the Park Service has accurately predicted and posted the time of the eruption, the tourists leave pleased, urging their Congressmen to support National Parks. However, if the tourists have to wait too long past the predicted time of eruption (say, ten minutes), or Old Faithful erupts ahead of schedule while little Johnnie is in the toilet, the tourists are upset. "Why can't these government employees get it right?" they scream.

Your task is to assist the Park Service in predicting the time of the next eruption of Old Faithful. A set of data has been collected (Geyser1.xls) that lists the day the data were collected, the duration of the eruption, and the interval before the next eruption. Based on these data, instruct the Park Service on how to predict upon the conclusion of an eruption when the next eruption will occur. Write up your guidelines, present relevant graphs, and explain your reasoning.