**Part III**

1. For the FALLS.SAS7BDAT dataset, fit a repeated measures Poisson model to two post-randomization periods (combining Weeks 1-2 with Weeks 3-4, and combining Weeks 5-6 with Weeks 7-8) to describe the counts of falls, with main effects of experimental group, baseline falls counts (trichotomized as in Problems 19 and 20), age, and period. You may assume that the sample size is large enough to fit this model. Use the same reference levels as specified in Problem 20, additionally specifying Week 1-4 as the reference for period. Specify estimating equations based on the Poisson distribution to fit the falls counts during each two-week interval.

For the purposes of this exam, determine goodness of fit for the main effects model by considering only pairwise interactions involving experimental group. Present your final model by listing the SAS table of GEE parameter estimates. Justify your choice for the final model, incorporating a brief discussion of any assumptions (including your choice of the working correlation structure) or limitations of the model.

1. For this problem, you should restate your final recommended model from Problem 23 at the top of the page for the grader’s reference. Using this final model, provide the falls rate ratio comparing experimental treatment and placebo at each post-randomization period (i.e., for Weeks 1-4 and separately for Weeks 5-8), and provide the corresponding 95% confidence intervals for these estimates.
2. For this problem, you should restate your final recommended model from Problem 23 at the top of the page for the grader’s reference. Provide the predicted mean falls count at the Week 5-8 interval for an individual having 5-10 baseline eight-week falls, who is 80 years old, and was:
3. randomized to the experimental treatment arm.
4. randomized to the placebo arm.