Exercise 1

In part a we assume there are no seasonal fluctuations that have a cycle greater than 5 months.

In part b we assume the older our data is the more important it is to predict the next month.

In part c we assume our time series data is made up of a mean and an error of alpha. We assume there is no trend or seasonality.

Exercise 2

This problem illustrates that it’s important that you take time to understand how you are going about modeling your predictions and why it’s important to understand what changes to your model and different models will do.

Exercise 3

The residual deviance is significantly lower than the null deviance, so the model performs better when it includes the independent variables which is what we want to see. The AIC value is quite high, but I tried a few different combinations of different predator variables and this had the lowest number. When looking at the coefficients we see that many have a positive influence on if a family income is over $150,00. The ones that don’t (higher number of people, house rented, and using food stamps) make sense.