Course: Data Analysis (task № 7)

Student’s Name and Surname \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please do the tasks below.

Open **Warranty.dta** file.

The aim of analysis is to find out what circumstances encourage customers to purchase extended warranties after a major appliance purchase. The response variable is an indicator of whether or not a warranty is purchased (Bought). The predictor variables are:

* Customer’s gender (Gender)
* Customer’s age (Age)
* Whether a gift is offered with the warranty or not (Gift)
* Price of the appliance (Price100)
* Customer’s race (Race)

Use the binary logistic regression to analyze the data.

1) Specify the regression equation (the linear part of the formula).

2) Assess the goodness-of-fit of the model and interpret the results of the analysis.

3) Interpret the influence of any predictor variable on the dependent variable using Exp(b).

4) Which gradients are statistically significant?

5) What is the percentage of correctly predicted cases by the model?

6) Do the diagnostics of the model.

- Are the residuals normally distributed?

- Are there any outliers? If yes, how many?

- Test the multicollinearity.