DSC 423: Data Analysis and Regression
Assignment 09: Advanced Regression Models

Your submission must include your name and student ID. Your submission must include the honor statement: "I have completed this work independently. The solutions given are entirely my own work." Your submission must be submitted as a PDF.

1) Previously you created a model using the PISA dataset. Build a model again, this time…
    a. (10 points) Use Ridge regression and present your model along with appropriate outputs.
        i. Discuss how this technique handles multicollinearity.
        ii. Evaluate the residual plots. Present the appropriate plots, describe them, and draw appropriate conclusions. Note: to look at the residual plots you can - after selecting variables with ridge regression - build a model using *lm* and *plot* the model.
    b. (10 points) Use LASSO regression and present your model along with appropriate outputs.
        i. LASSO is a form of feature selection. Discuss how it reduced the feature space.
    c. (10 points) Are the two models the same? Explain.
2) REMISSION
    a. (10 points) Download "remission" and create a logistic model to predict remission.
        i. Present your model.
    b. (5 points) Notice that you are using the *glm* function.
        i. Explain how this differs from *lm*.
    c. (5 points) Evaluate the model particularly the independent variables.