1. Which of the four predictors is the most effective at predicting MPG? You can answer this naively by regressing with each predictor alone and noting the R2 value of the model (variance explained by the model).

*The most effective predictor of the four is Weight, whose R2 value rounds to 0.69 and is the largest value out of the predictors. Since R2 varies between 0 and 1, with 0 representing a poor fit and 1 representing a perfect fit, the value of Weight is the closes to 1 and shows that it is the most effective at predicting MPG.*

1. In the single-predictor model of the best predictor, what is the coefficient on that predictor? How should you interpret it?

*The coefficient of Weight is -0.007645. As the number is negative, this shows that when Weight increases, it tends to lead to a decrease in MPG.*

1. In the linear regression model containing all four predictors, what is its coefficient of determination? How should you interpret that?

*The coefficient of all four predictors are -0.005906 (Displacement), -0.043818 (Horsepower), -0.005284 (Weight), and -0.024759 (Acceleration). All four coefficients are negative, which means each predictor, if increased, would correlate with a decrease in MPG*.

1. If we wanted to include the cylinder’s information from the dataset into our model, could we still use linear regression? If so, how would we do it? Show the code for your approach.

*Yes, linear regression is still possible. Here is the code:*

