**AP1 Report**

1. Weight is the most effective at predicting MPG. The R-squared value 0.69 indicates that 69% of the variance in MPG is explained by weight. None of the other single-predictor models explained as much of the variability in MPG.
2. In the single-predictor model using weight, the coefficient for weight is -0.0076. This indicates that a 1 lb. increase in car weight is associated with 0.0076 mpg decrease in fuel efficiency on average. However, because the plot revealed a nonlinear relationship between weight and mpg, I do not expect this linear model to provide the best predictions across all values of weight.
3. The coefficient of determination is 0.707. It indicates how much of the variance in MPG is explained by the multiple linear regression model that includes all four predictors.
4. Yes. Create dummy codes for each value of the categorical variable. Because there are 5 categories for cylinders, we create 4 indicator variables with 3 cylinders as the baseline.