There is a data set built into R called `mtcars` that includes several measures on different types of cars. Learn more about the data set using `?mtcars`. Where applicable, complete the following questions in RStudio and write the code you used below.

Question 1

We seek to explain the fuel efficiency of cars using their weight per gallon. Summarize the association between the fuel efficiency (measured in miles per gallon) and the weight of the car using a scatter plot.

Question 2

What is the corresponding correlation coefficient?

Question 3

What is the corresponding linear model?

Question 4
Repeat **Question 1** but use the horsepower of the car instead of the weight as the explanatory variable and produce a scatterplot.

Question 5
What is the corresponding correlation coefficent?

Question 6
What is the corresponding linear model?

Question 7
What is the better way to compare the strength of the linear relationship between these two pairs of variables (mpg and wt; mpg and hp): the correlation coefficients or the slopes of the linear models? Why? Explain in 1-2 sentences.

Question 8
Which car has the lowest fuel efficiency given its weight? State the car and provide supporting code for your answer.