Consider the following linear model:

$$y = 3.2 + 1.87 \cdot x_1 - 2.11 \cdot x_2 + 0.3 \cdot x_3$$

1. (3 points) Interpret the estimated coefficient associated to x_1. That is, interpret 1.87.

2. (3 points) The coefficient of determination of the above model is 75%. Interpret it.

3. (3 points) Using the model, estimate the value of y when $x_1 = 3.2$, $x_2 = 1.2$, and $x_3 = 2.5$.

4. Consider the `Automobile_data.csv` datafile. The Automobile dataset has a different characteristic of an auto such as body-style, wheel-base, engine-type, price, mileage, horsepower and many more. **In Python**, answer the following:

   (a) (3 points) Using the pandas library, read the csv datafile and create a data-frame called `autos`.

   (b) (5 points) Build a linear model, in which `price` is the target variable, `horsepower` and `length` are the input variables.

   (c) (4 points) Using the model from part (b), predict the price of a car when `horsepower` = 150 and `length` = 170.

5. Consider the `Automobile_data.csv` datafile. The Automobile dataset has a different characteristic of an auto such as body-style, wheel-base, engine-type, price, mileage, horsepower and many more. **In R**, answer the following:

   (a) (3 points) Using the pandas library, read the csv datafile and create a data-frame called `autos`.

   (b) (5 points) Build a linear model, in which `price` is the target variable, `horsepower` and `wheel.base` are the input variables.

   (c) (4 points) Using the model from part (b), predict the price of a car when `horsepower` = 150 and `wheel.base` = 100.