Consider the following linear model:

$$y = 3.2 + 1.87x$$

1. (3 points) Interpret the slope of the line.
2. (3 points) The coefficient of determination of the above model is 89%. Interpret it.
3. (3 points) Using the model, estimate the value of y when $x = 3.2$.
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) (4 points) Create a scatter-plot between `horsepower` and `price`. Comment on the plot.
   (c) (5 points) Build a linear model, in which `price` is the target variable and `horsepower` is the input variable. Using the appropriate plot, check the linearity assumption. Comment on the plot.
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) (4 points) Create a scatter-plot between `wheel.base` and `length`. Comment on the plot.
   (c) (5 points) Build a linear model, in which `length` is the target variable and `wheel.base` is the input variable. Using the appropriate plot, check the constant variance assumption. Comment on the plot.