Assignment No 2

1. When implementing linear regression of some dependent variable y on the set of independent variables $\mathbf{x} = (x_1, \ldots, x_r)$, where r is the number of predictors, which of the following statements will be true?

Ans Both and b

2. What indicates that you have a perfect fit in linear regression?

Ans The value $R^2 = 1$, which corresponds to SSR = 0

3. In simple linear regression, the value of what shows the point where the estimated regression line crosses the y axis?

Ans B0

4. Which one represents an underfitted model?

Ans The top-left plot

5. There are five basic steps when you're implementing linear regression:
   - a. Check the results of model fitting to know whether the model is satisfactory.
   - b. Provide data to work with, and eventually do appropriate transformations.
   - c. Apply the model for predictions.
   - d. Import the packages and classes that you need.
   - e. Create a regression model and fit it with existing data.

Ans d, b, e, a, c

6. Which of the following are optional parameters to LinearRegression in scikit-learn?

Ans Except Fit all are optional parameters to linear Regression in scikit-learn.

7. While working with scikit-learn, in which type of regression do you need to transform the array of inputs to include nonlinear terms such as x^2?

Ans Polynomial Regression.

8. You should choose statsmodels over scikit-learn when:

Ans You need more detailed results.

9. _____ is a fundamental package for scientific computing with Python. It offers comprehensive mathematical functions, random number generators, linear algebra routines, Fourier transforms, and more. It provides a high-level syntax that makes it accessible and productive.

Ans Numpy

10_____ is a Python data visualization library based on Matplotlib. It provides a high-level interface for drawing attractive and informative statistical graphics that allow you to explore and understand your data. It integrates closely with pandas data structures.

Ans Seaborn