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

- a) $\beta_0, \beta_1, \dots, \beta_r$ are the regression coefficients.
- b) Linear regression is about determining the best predicted weights by using the method of ordinary least squares.
- c) E is the random interval
- d) Both a and b

ANS:-A) $\beta_0, \beta_1, \dots, \beta_r$ are the regression coefficients.

22) What indicates that you have a perfect fit in linear regression?

- a) The value $R^2 < 1$, which corresponds to $SSR = 0$
- b) The value $R^2 = 0$, which corresponds to $SSR = 1$
- c) The value $R^2 > 0$, which corresponds to $SSR = 1$
- d) The value $R^2 = 1$, which corresponds to $SSR = 0$

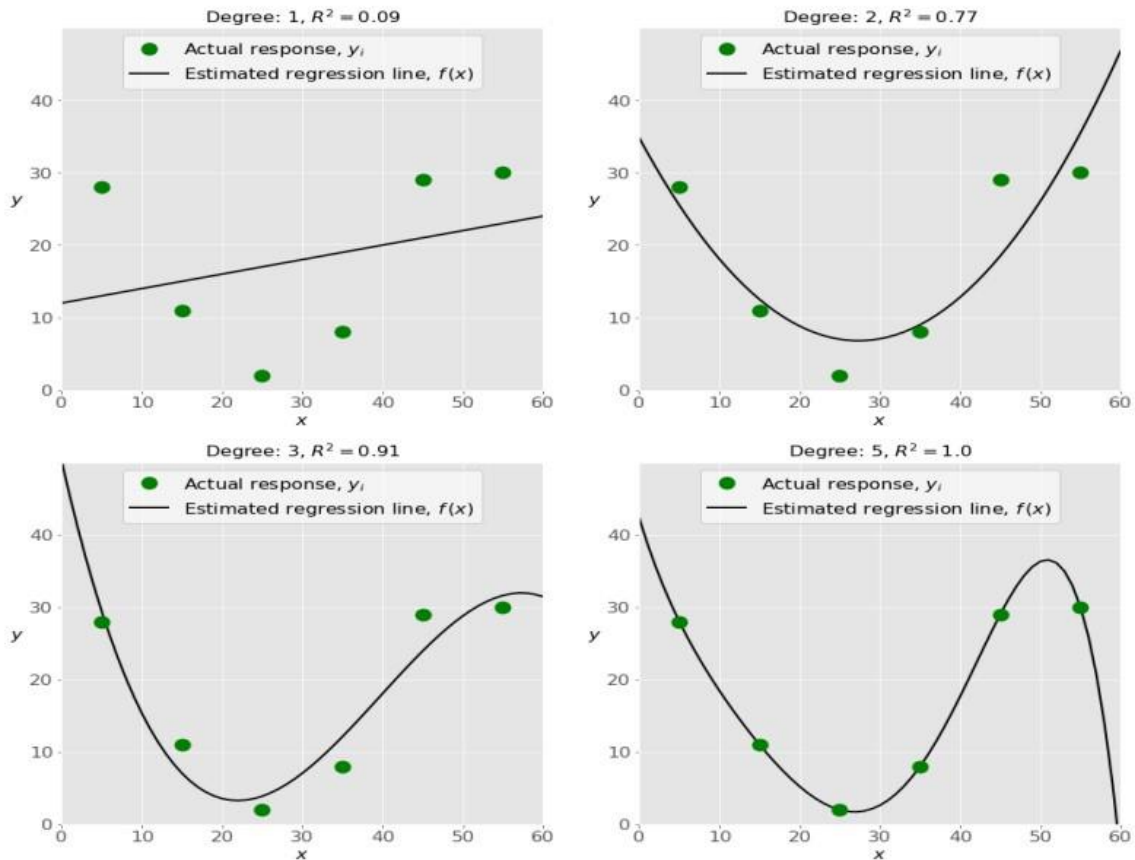
ANS:- D) The value $R^2 = 1$, which corresponds to $SSR = 0$

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

- a) Y
- b) B_0
- c) B_1
- d) F

ANS) B_0

24) Check out these four linear regression plots: Which one represents an underfitted model?



Which one represents an **underfitted** model?

ANS: B) e, d, b, a, c

26) Which of the following are optional parameters to Linear Regression in scikit-learn?

- a) Fit
- b) fit_intercept
- c) normalize
- d) copy_X
- e) n_jobs
- f) reshape

ANS: So, the correct answer is: b) fit_intercept, c) normalize, d) copy_X, e) n_jobs

27) 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 ?

- a) Multiple linear regression

- b) Simple linear regression
- c) Polynomial regression

ANS:-c) Polynomial regression

28) You should choose statsmodels over scikit-learn when:

- A) You want graphical representations of your data.
- b) You're working with nonlinear terms.
- c) You need more detailed results.
- d) You need to include optional parameters.

ANS:- c) You need more detailed results

29) _____ 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.

- a) Pandas
- b) Numpy
- c) Statsmodel
- d) scipy

ANS:- B) Numpy

30) _____ 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.

- a) Bokeh
- b) Seaborn
- c) Matplotlib
- d) Dash

ANS:- b) Seaborn