

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?

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?

Ans. b) 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?

Ans. a) β_0

24) Check out these four linear regression plots:

Which one represents an underfitted model?

Ans. c) The bottom-right plot

25) There are five basic steps when you're implementing linear regression:

- Check the results of model fitting to know whether the model is satisfactory.
- Provide data to work with, and eventually do appropriate transformations.
- Apply the model for predictions.
- Import the packages and classes that you need.
- Create a regression model and fit it with existing data.

However, those steps are currently listed in the wrong order. What's the correct order

Ans. d) d, b, e, a, c

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

Ans. b) `fit_intercept`

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 ?

Ans. c) Polynomial regression

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

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.

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.

Ans. b) Seaborn