

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?

d) Both a and b

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

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  $x$  axis?

b)  $B_0$

24) Check out these four linear regression plots:

Which one represents an **underfitted** model?

d) The top-left plot

25) 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.

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

d) d, b, e, a, c

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

b) fit\_intercept

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

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

d) You need to include optional parameters.

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.

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.

c) Matplotlib