21) 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?

a) $\beta_0, \beta_1, \ldots, \beta_r$ 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

The correct option is d) both a and b

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

The correct option is d) d) The value $R^2 = 1$, which corresponds to SSR = 0.

The value $R^2 = 1$ indicates that the regression predictions perfectly fit the data.

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

a) Y

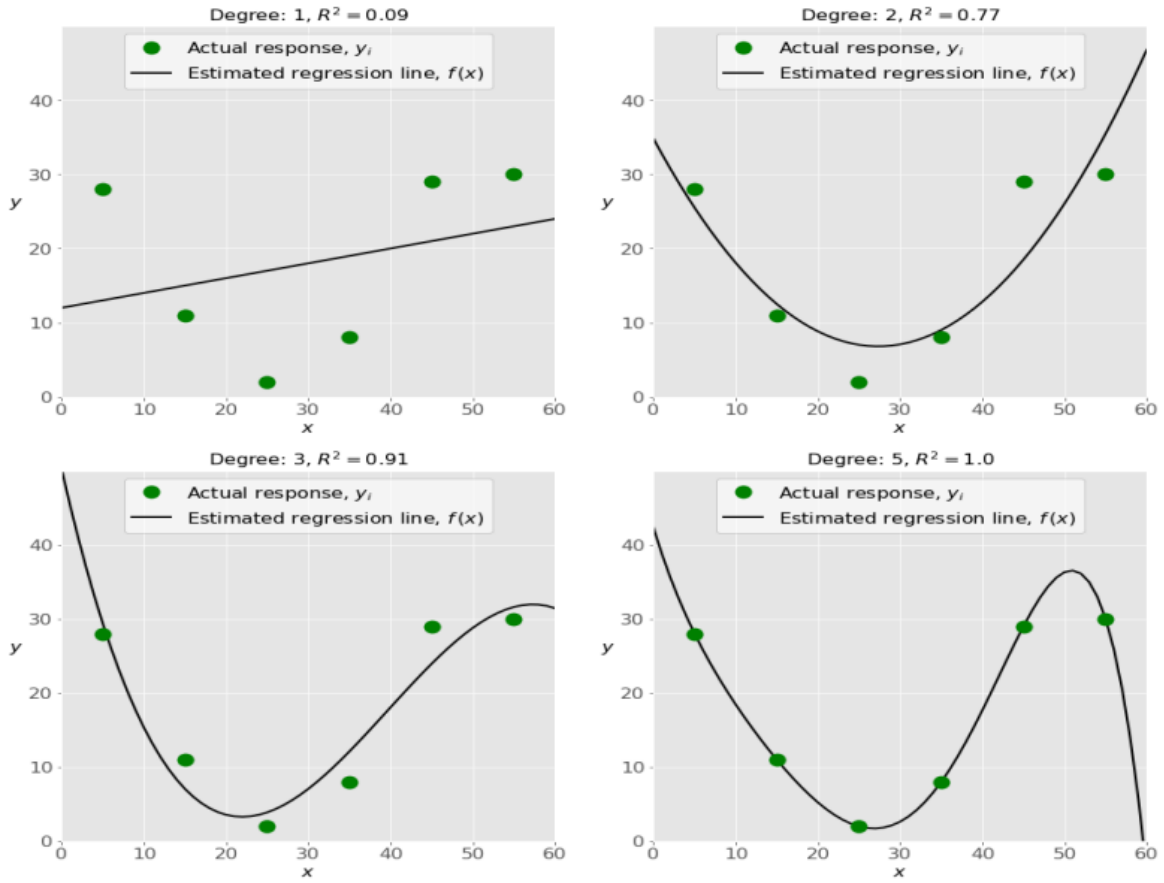
b) B0

c) B1

d) F

The correct option is b) B0

24) Check out these four linear regression plots:



Which one represents an underfitted model?

a) The bottom-left plot

b) The top-right plot

c) The bottom-right plot

d) The top-left plot

The correct option is a) The bottom- 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?

a) e, c, a, b, d

b) e, d, b, a, c

c) d, e, c, b, a

d) d, b, e, a, c

The correct option is d) d, b, e, a, c

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

a) Fit

b) fit_intercept

c) normalize

d) copy_X

e) n_jobs

f) reshape

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

The correct answer 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.

The correct answer is 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.

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

The correct answer is 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

The correct answer is c) Matplotlib