- 21 When implementing linear regression of some dependent variable y on the set of independent variables  $\mathbf{x} = (x_1, ..., x_r)$ , where r is the number of predictors, which of the following statements will be true?
  - a)  $\beta_0, \beta_1, ..., \beta_r$  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 and b

Answer(21): d

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

Answer(22): d

23)

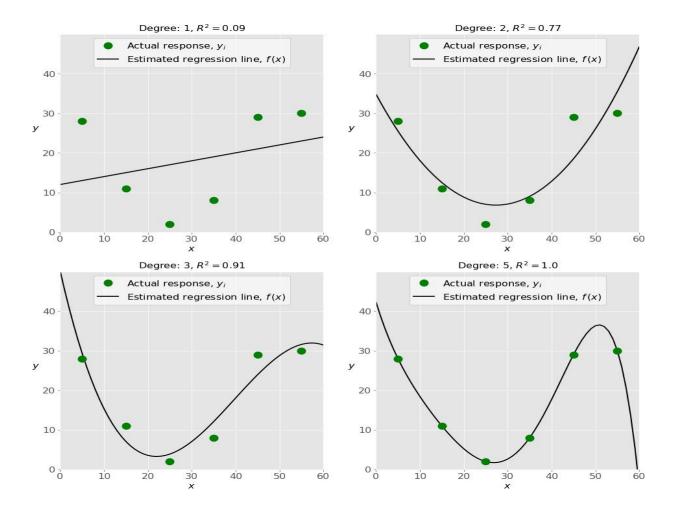
In simple linear regression, the value of **what** shows the point where the estimated regression line crosses the *y* axis?

- a) Y
- b) B0
- c) B1
- d) F

Answer(23): b

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

## Answer(24): d

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?

b) e, d, b, a, c c) d, e, c, b, a
d) d, b, e, a, c
Answer(25): d
26 ) Which of the following are optional parameters to LinearRegression in scikit-learn?
<ul> <li>a) Fit</li> <li>b) fit_intercept</li> <li>c) normalize</li> <li>d) copy_X</li> <li>e) n_jobs</li> <li>f) reshape</li> </ul>
Answer(26): b,c,d,e
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
Answer(27): c
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.
Answer(28): c
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

a) e, c, a, b, d

## Answer(29): b

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

Answer(30): b