- 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 a and b

ANS: 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

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

23)

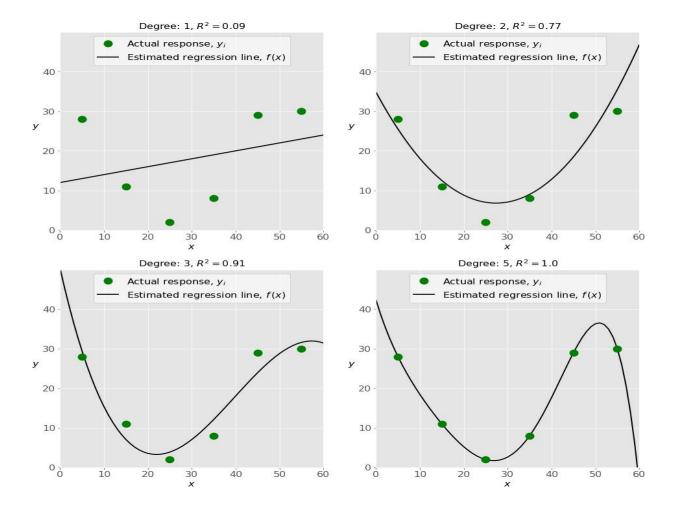
In simple linear regression, the value of **what** shows the point where the estimated regression line crosses the *y* axis?

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

ANS: 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

ANS: 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

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

26) Which of the following
a) Fit

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

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

ANS: 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

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 result

- 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

- e) Bokeh
- f) Seaborn
- g) Matplotlibh) Dash
- i)