

[Question's and Answer's(MCQ)]

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?

- a) $\beta_0, \beta_1, \dots, \beta_r$ 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**

Answer: 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

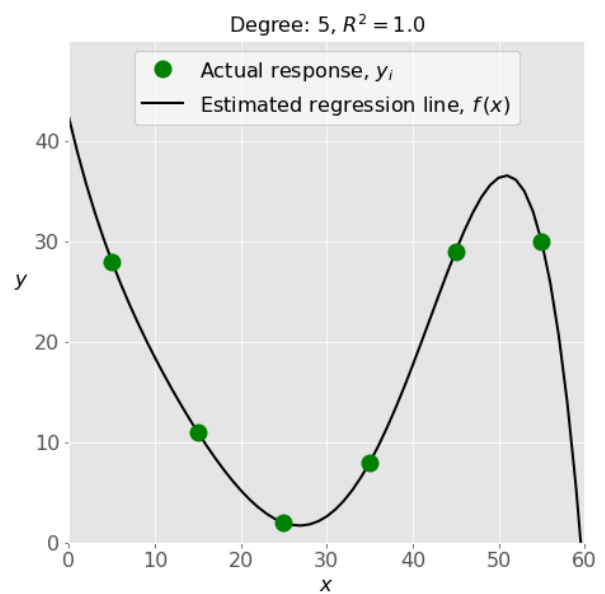
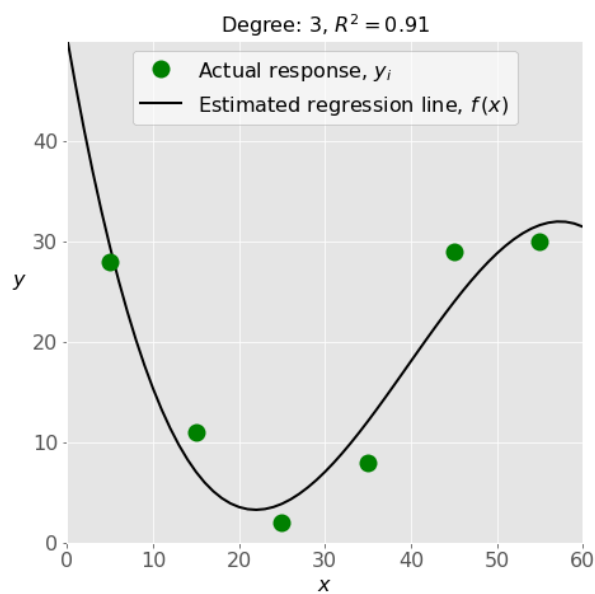
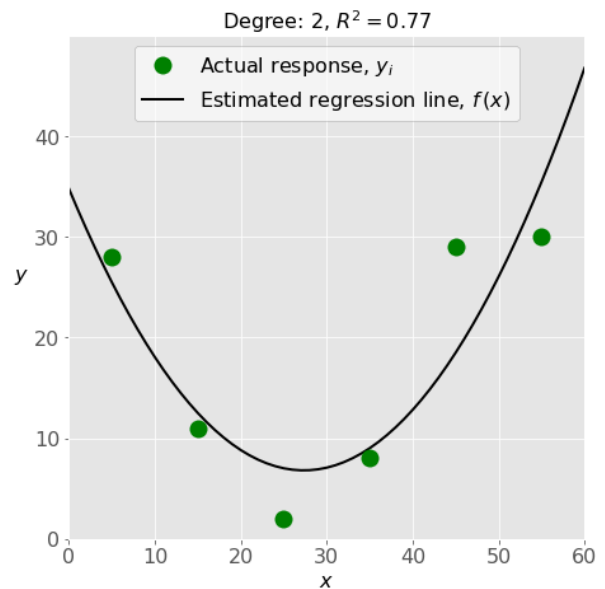
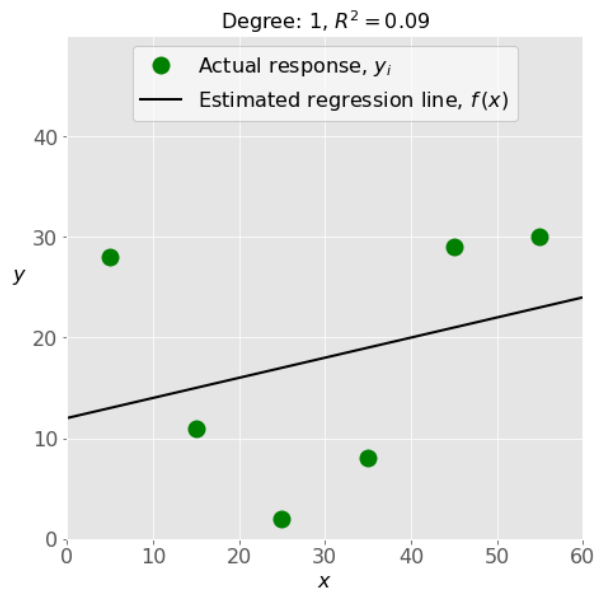
Answer: d) The value $R^2 = 1$, which corresponds to SSR = 0

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

- a) Y**
- b) B_0**
- c) B_1**
- d) F**

Answer: a) Y

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: 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

Answer: 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

Answer: 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

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.

Answer: b) You're working with nonlinear terms.

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

Answer: 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**

Answer: b) Seaborn