21 When implementing linear regression of some dependent variable 𝑦 on the set of independent

variables 𝐱 = (𝑥₁, …, 𝑥ᵣ), where 𝑟 is the number of predictors, which of the following statements will

be true?

~~a) 𝛽₀, 𝛽₁, …, 𝛽ᵣ 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

22 )

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

~~a) The value 𝑅² < 1, which corresponds to SSR = 0~~

~~b) The value 𝑅² = 0, which corresponds to SSR = 1~~

~~c) The value 𝑅² > 0, which corresponds to SSR = 1~~

d) The value 𝑅² = 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~~

~~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~~

~~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~~

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

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 𝑥²?

~~a)Multiple linear regression~~

~~b) Simple linear regression~~

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.~~

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~~

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~~