

## DM-Quiz-2020-Q5

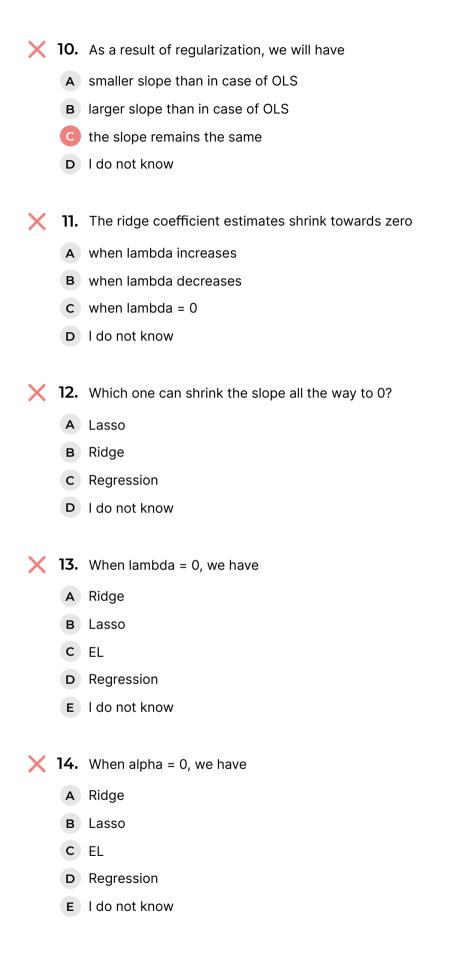
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- 1. In the multiple linear regression, we assume that...
  - A The number of observations is much larger than the number of variables (n>>p)
  - B The number of observations is slightly larger than the number of variables (n>p)
  - C The number of observations equals than the number of variables (n=p)
  - D The number of observations is lees than the number of variables (n<p)
  - **E** It is not important
  - F I do not know
- **2.** The way of solving the problem of a large number of variables is...
  - A Subset Selection & Shrinkage (Regularization)
  - B Shrinkage (Regularization) & Maximum Likelihood estimation
  - C Dimension Reduction & OLS estimation
  - **D** I do not know
  - **E** The absence of the right answer
- **3.** The bias of an estimator (e.g. z^) equals
  - $A E(z^{-}) z$
  - **B**  $E(z^2) [E(z)]^2$
  - c  $[E(z^2) E(z)]^2$
  - $D E(z^2)$
  - E I do not know
- **4.** The main idea of regularization is
  - A To introduce a small amount of bias in order to have less variance.
  - B To introduce a small amount of variance in order to have less bias.
  - c To introduce a small amount of variance and bias in order to have less bias.
  - D I do not know

| X | 5. | With which function we can show regularization in R |
|---|----|---|
|   | A  | glmnet()  |
|   | В  | regular()   |
|   | C  | lm()  |
|   | D  | glm()   |
|   | E  | I do not know                                       |
|   |    |   |
| X | 6. | How the tune of any parametr can be made            |
|   | A  | using Cross validation                              |
|   | В  | It is impossible                                    |
|   | C  | I do not now  |
|   | D  | using larger sample                                 |
|   | E  | only having population                              |
|   |    |   |
| X | 7. | Elastic Net is                                      |
|   | A  | the combination of L1 and L2 regularization         |
|   | В  | the combination of L2 and L3 regularization         |
|   | C  | is independent from other types of refularization   |
|   | D  | I do not know                                       |
|   | E  | not a type of regularization                        |
|   |    |   |
| X | 8. | Regularization is used only for                     |
|   | A  | Poisson Regression                                  |
|   | В  | Linear Regression                                   |
|   | C  | Logistic Regression                                 |
|   | D  | any regression                                      |
|   | E  | I do not know                                       |
|   |    |   |
| X | 9. | Regularization can solve the problem of             |
|   | A  | heteroscedasticity                                  |
|   | В  | multicollinearity                                   |

**c** autocorrelation

**D** I do not know



| X | 15. | Which function can help to perform cross-validation for regularization in R? |
|---|-----|--|
|   | Α   | cv.glmnet()  |
|   | В   | cros_val()   |
|   | C   | glmnet(method = "cv)   |
|   | D   | I do not know  |
|   |     |  |
| V | 16  | Why we use set seed() in D2  |

- X 16. Why we use set.seed() in R?
  - A To have universal result
  - B To perform better result
  - c To have random models
  - **D** I do not know