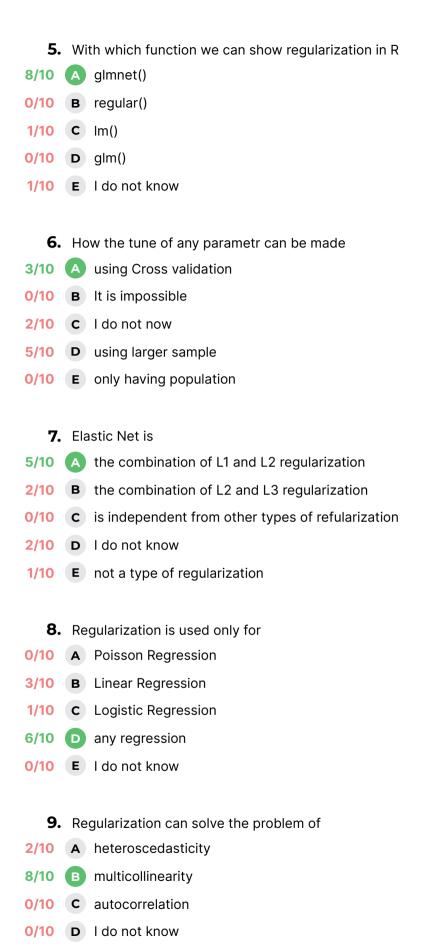


## DM-Quiz-2020-Q5

## 16 Questions

- 1. In the multiple linear regression, we assume that...
- 3/10 A The number of observations is much larger than the number of variables (n>>p)
- 2/10 B The number of observations is slightly larger than the number of variables (n>p)
- 3/10 C The number of observations equals than the number of variables (n=p)
- 1/10 **D** The number of observations is lees than the number of variables (n<p)
- 1/10 **E** It is not important
- 0/10 F I do not know
  - 2. The way of solving the problem of a large number of variables is...
- 3/10 A Subset Selection & Shrinkage (Regularization)
- 3/10 B Shrinkage (Regularization) & Maximum Likelihood estimation
- 3/10 C Dimension Reduction & OLS estimation
- 0/10 D I do not know
- 1/10 E The absence of the right answer
  - **3.** The bias of an estimator (e.g. z<sup>^</sup>) equals
- 0/10 A  $E(z^{-}) z$
- **6/10 B**  $E(z^2) [E(z)]^2$
- 3/10 **c**  $[E(z^2) E(z)]^2$
- **1/10 D** E(z^2)
- 0/10 E I do not know
  - 4. The main idea of regularization is
- 4/10 A To introduce a small amount of bias in order to have less variance.
- 4/10 B To introduce a small amount of variance in order to have less bias.
- 2/10 C To introduce a small amount of variance and bias in order to have less bias.
- 0/10 D I do not know



- 0/11 D I do not know
  - 11. The ridge coefficient estimates shrink towards zero
- 5/10 A when lambda increases

3/11 C the slope remains the same

- 2/10 B when lambda decreases
- 2/10 **C** when lambda = 0
- 1/10 D I do not know
  - **12.** Which one can shrink the slope all the way to 0?
- 5/10 A Lasso
- **3/10 B** Ridge
- 0/10 C Regression
- 2/10 D I do not know
  - **13.** When lambda = 0, we have
- **2/10 A** Ridge
- 2/10 B Lasso
- 1/10 C EL
- 2/10 D Regression
- 3/10 E I do not know
  - **14.** When alpha = 0, we have
- 3/10 A Ridge
- 2/10 B Lasso
- 1/10 C EL
- 1/10 D Regression
- 3/10 E I do not know

15. Which function can help to perform cross-validation for regularization in R?

- 2/10 A cv.glmnet()
- 3/10 B cros\_val()
- 5/10 **c** glmnet(method = "cv)
- 0/10 D I do not know

16. Why we use set.seed() in R?

- 4/10 A To have universal result
- 2/10 B To perform better result
- 4/10 **c** To have random models
- 0/10 D I do not know