

MACHINE LEARNING - WORKSHEET 11 (LINEAR REGRESSION)

In

In Q1	to Q8, only one option is correct, Choose the	he correct option:
1.	What happens to R^2 measure if we add a ne	w feature?
	A) remains same	B) always increases
	C) may or may not increase	D) always decreases
2.	The correct relationship between SST, SSR and SSE is given by:	
	A) $SSR = SST + SSE$	B) $SST = SSR + SSE$
	C) $SSE = SSR - SST$	D) None of the above
3.	Residuals in regression analysis can be defined as:	
	A) difference between the actual value and the predicted value.	
	B) difference between the actual value and the mean of predicted value.	
	C) difference between the actual value and mean of dependent variable.	
	D) None of the above.	
4.	In a simple linear regression model, if we change the input variable by 1 unit, then how much output variable	
	will change?	
	A) By 1	B) No Change
	C) By its slope	D) None of the above
5.	If the coefficient of determination is equal t	
	A) must also be equal to 1	B) can be either -1 or 1
	C) can be any value between -1 to 1	D) must be -1
6.	Which of the following plot is best suited for the linear relationship of continuous variables?	
	A) Scatter plot	B) Histograms
	C) Pie charts	D) All of the above
	The ratio of MSR/MSE produces:	
	A) t-statistics	B) f-statistics
	C) z-statistics	D) None of the above.
8.	— — — — — — — — — — — — — — — — — — —	only L ₂ normalization for its penalty parameter?
	A) Lasso	B) Elastic Nets
	C) Ridge	D) All of the above
In Q9	to Q11, more than one options are correct,	Choose all the correct options:
9.	Which of the following statement/s are true for best fitted line?	
	A) It shows the causal relationship between dependent and independent variables	
	B) It shows the positive or negative relation between dependent and independent variables	
	C) It always goes through origin	
	D) It is a straight line that is the best approximation of the given data sets	
10	Regularizations helps in:	
	A) Reducing the training time	B) Generalizing the test set

D) Grouping the data

B) Singular Value Decomposition

Q12 to Q15 are subjective answer type questions, Answer them briefly.

12. Explain R² and adjusted R² metrics?

C) Automatic feature selection

A) Normal Equation C) Parity checks

13. Explain the cost function of linear regression?

11. Linear regression can be implemented through:

- 14. Differentiate SSE, SSR and SST.
- 15. What are the various evaluation metrics for linear regression?