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## **Regression quiz**

6 out of 6 correct

1.	What	is	Lasso	Regre	ession	-
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	A linear regression model that uses regularization
$\bigcirc$	A non-linear regression model
$\bigcirc$	A model that fits a polynomial curve to the data

A model that uses decision trees to predict outcomes

**Explanation:** Lasso Regression is a linear regression model that uses regularization to prevent overfitting. It does this by adding a penalty term to the cost function that encourages the model to use fewer features. This penalty term is based on the L1 norm of the model coefficients.

2. What is the purpose of Lasso Regression?

$\bigcirc$	To maximize the R-squared value of the model
$\bigcirc$	To minimize the mean squared error of the model
	To prevent overfitting in the model
$\bigcirc$	To fit a polynomial curve to the data

**Explanation:** The purpose of Lasso Regression is to prevent overfitting in the model by adding a penalty term to the cost function that encourages the model to use fewer features. This penalty term is based on the L1 norm of the model coefficients.

3. Which of the following is a hyperparameter of Lasso Regression?



Learning rate

Regularization parameter

Number of iterations				
Number of hidden layers				
<b>Explanation:</b> The regularization parameter is a hyperparameter of Lasso Regression that controls the strength of the regularization penalty. A larger value of this parameter will result in a stronger penalty, which will encourage the model to use fewer features.				
4. Which of the following is an advantage of Lasso Regression?				
It can handle non-linear relationships between features and the target variable				
It can handle missing values in the data				
It can select the most important features in the model				
It is computationally less expensive than other regression models				
<b>Explanation:</b> Lasso Regression can select the most important features in the model by shrinking the coefficients of the less important features towards zero. This helps to simplify the model and reduce the risk of overfitting.				
5. Which of the following is a disadvantage of Lasso Regression?				
It can only be used for linear regression problems				
It is sensitive to the scale of the features				
It is prone to underfitting				
It can handle missing values in the data				
<b>Explanation</b> : Lasso Regression is sensitive to the scale of the features, which means that it can give different importance to features based on their scale. To avoid this problem, it is recommended to scale the features before applying				

Ε Lasso Regression.

6. Which of the following is the penalty term used in Lasso Regression?

L1 norm of the model coefficients

$\bigcirc$	L2 norm of the model coefficients
$\bigcirc$	Absolute difference between the predicted and actual values
$\bigcirc$	Square of the difference between the predicted and actual values

**Explanation:** The penalty term used in Lasso Regression is based on the L1 norm of the model coefficients. This penalty term encourages the model to use fewer features by shrinking the coefficients of the less important features towards zero.

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