Practice Quiz: Linear Regression
Practice Assignment • 10 min

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 60%. We keep your highest score.

Next item →

1. Which of the following regression methods is a modern machine learning technique? 1 / 1 point

- (•) Random forest regression
- ( ) Simple linear regression
- ( ) Polynomial regression
- ( ) Linear regression

Correct
Random forest is a modern machine learning technique that uses decision trees in an ensemble to make predictions.

2. What type of regression would be most appropriate for predicting carbon dioxide emissions when the independent variables considered are engine size and number of cylinders? 1 / 1 point

- ( ) Simple linear regression
- ( ) Logistic regression
- ( ) Non-linear regression
- (•) Multiple linear regression

Correct
Multiple linear regression is suited for situations where more than one independent variable is utilized to predict a dependent variable. It is the most appropriate choice as both engine size and number of cylinders are being considered.

3. Why is ordinary least squares (OLS) regression's accuracy for complex data sets limited? 1 / 1 point

- ( ) OLS regression is suited only for predicting categorical outcomes.
- ( ) OLS regression cannot produce a best-fit line through the data.
- ( ) OLS regression requires extensive tuning and hyperparameter adjustments.
- (•) OLS regression may inaccurately weigh outliers, resulting in skewed outputs.

Correct
Outliers can disproportionately affect OLS calculations, reducing model accuracy.

4. What multiple linear regression model estimates the values of coefficients by minimizing the Mean Squared Error (MSE)? 1 / 1 point

- ( ) Principal component analysis (PCA)
- (•) Ordinary least squares
- ( ) Stochastic gradient descent
- ( ) Gradient descent

Correct
Ordinary least squares is a popular method for estimating coefficients by minimizing the MSE.

5. What type of issue occurs when a high-degree polynomial regression model memorizes random noise in the data? 1 / 1 point

- ○ Gradient descent
- ◉ Overfitting
- ○ Underfitting
- ○ Linear regression

Correct
Overfitting happens when the model captures random noise, reducing its generalization ability.