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Correlation and Regression Quiz PDF

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Which type of correlation coefficient is used for ordinal data?

◯ Pearson's

◯ Spearman's

◯ Kendall's

◯ None of the above

Explain the difference between correlation and causation.

Which of the following are assumptions of linear regression? (Select all that apply)

☐ Linearity

☐ Independence

☐ Homoscedasticity

☐ Non-linearity

What does a correlation coefficient of 0 indicate?

◯ Strong positive relationship

◯ No relationship

◯ Strong negative relationship

◯ Perfect relationship

Which of the following can be used to evaluate a regression model? (Select all that apply)

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☐ Coefficient of Determination (R²)
☐ Residual Analysis
☐ Significance Testing
☐ Mode

What are characteristics of Spearman's Rank Correlation? (Select all that apply)

☐ It is a non-parametric measure
☐ It requires interval data
☐ It is used for ordinal data
☐ It assumes a linear relationship

Which of the following are types of regression? (Select all that apply)

☐ Simple Linear Regression
☐ Multiple Regression
☐ Non-linear Regression
☐ Exponential Regression

What are potential applications of regression analysis? (Select all that apply)

☐ Forecast
☐ Risk management
☐ Data encryption
☐ Determining relationships between variables

Describe a scenario where multiple regression would be more appropriate than simple linear regression.

What are the potential consequences of violating the assumptions of linear regression?

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In a simple linear regression equation Y = a + bX, what does ' b ' represent?

○ Y-intercept
○ Slope of the line
○ Dependent variable
○ Independent variable

Why is it important to perform residual analysis in regression?

How can outliers affect the results of a correlation analysis?

What is the range of the Pearson correlation coefficient?

○ 0 to 1
○ -1 to 1
○ -2 to 2
○ 0 to 100

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Which measure is used to determine the strength and direction of a linear relationship between two variables?

◯ Mean

◯ Median

◯ Correlation coefficient

◯ Mode

Which assumption is NOT required for linear regression?

◯ Linearity

◯ Independence

◯ Homoscedasticity

◯ Causality

Which of the following is a limitation of using correlation?

◯ It can only measure linear relationships

◯ It implies causation

◯ It is sensitive to outliers

◯ All of the above

What does an R^2 value of 0.85 indicate in a regression model?

◯ 85% of the variance in the dependent variable is explained by the model

◯ 15% of the variance in the dependent variable is explained by the model

◯ The model is not significant

◯ The model is overfitted

Discuss the implications of a negative correlation coefficient in a real-world context.

Which statements about correlation are true? (Select all that apply)

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☐ Correlation implies causation

☐ Correlation can be positive or negative

☐ Correlation measures the strength of a linear relationship

☐ A correlation of 0 means no linear relationship

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