STA 3180 Statistical Modelling: Regression

Extra Practice Problems: Regression

1. What is the equation for a linear regression model?

Solution: The equation for a linear regression model is $y = \beta0 + \beta1x + \varepsilon$, where y is the dependent variable, x is the independent variable, $\beta0$ is the intercept, $\beta1$ is the slope, and ε is the error term. [CORRECT]

2. What is the formula for calculating the coefficient of determination (R2)?

Solution: The formula for calculating the coefficient of determination (R2) is R2 = 1 - (SSresidual/SStotal). [CORRECT]

3. What is the formula for calculating the standard error of the estimate (SEE)?

Solution: The formula for calculating the standard error of the estimate (SEE) is SEE = √(SSresidual/(n-2)). [CORRECT]

4. What is the formula for calculating the coefficient of correlation (r)?

Solution: The formula for calculating the coefficient of correlation (r) is r = √(R2). [INCORRECT] The correct formula for calculating the coefficient of correlation (r) is r = √((Sxy)2/(Sxx)(Syy)).