Final Exam

Problems

Exercise 1 (1 point)**.**

In regression analysis, the model in the form

$$y = \beta_0 + \beta_1 x + \varepsilon$$

is called

A. estimated simple linear regression equation
B. simple linear regression model
C. correlation equation

Exercise 2 (1 point)**.**

A simple regression model has

A. only one independent variable
B. more than one dependent variable
C. more than one independent variable
D. at least two dependent variables

Exercise 3 (1 point)**.**

In regression analysis, the variable that is being predicted is called the *response variable*. It is also called the

A. dependent variable
B. independent variable
C. intervening variable
D. usually x

Exercise 4 (1 point)**.**

In simple linear regression (SLR), which of the following is **NOT** a required assumption about the error term ε?

A. The expected value of the error term is one.
B. The variance of the error term is constant.
C. The values of the error term are independent.
D. The error term is normally distributed.

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1 point

A regression analysis between **sales** (measured in $1000) and **price** (measured in dollars) resulted in the equation $\widehat{y} = 60 - 8x$. This equation implies that an

A. increase of $1 in sales is associated with an increase of $8 in price
B. increase of $1 in sales is associated with a decrease of $52000 in price
C. increase of $1 in price is associated with an increase of $52 in sales
D. increase of $1 in price is associated with a decrease of $8000 in sales

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Exercise 5 (1 point)**.**

The confidence interval estimate for an **average value of** y (in a linear regression model) will be _____ compared to the prediction interval estimate for a particular value.

A. the same
B. wider
C. narrower
D. sometimes narrower, and sometimes wider

Exercise 6 (1 point)**.**

In simple linear regression analysis, which of the following is **NOT true**?

A. MSE equals SSE divided by the degrees of freedom for error.
B. The F test and the t test have the same p-value, thus yield the same conclusion.
C. The F test and the t test do not have the same p-value, thus do not yield the same conclusion.
D. The relationship between x and y is represented by a straight line.