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The Multivariate Linear Model - Quiz

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Question 1

1/1 point (graded)

We can extend our bivariate linear model to a multivariate linear model:

$$Y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_k x_{ki} + \epsilon_i \text{ for } i = 1, 2, \dots, n$$

We can write the multivariate linear model using matrix notation: $Y = X\beta + \epsilon$. In matrix notation, what would the dimensions of Y be?

☐ a. $n \times n$ ☐ b. $k \times k$ ☒ c. $n \times 1$ ✓☐ d. $k \times 1$

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The Linear Model

due Nov 28, 2016 05:00 IST



Explanation

Y would have n rows (one row for each observation). Each observation has one outcome value.

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

Question 2

1/1 point (graded)

In matrix notation, what would the dimensions of X be?

☐ a. $n \times 1$

☐ b. $n \times (k-1)$

☐ c. $n \times k$

☒ d. $n \times (k+1)$ ✓

Explanation

X would have n rows (one row for each observation). Each row or observation has $k + 1$ values. There are k measures for each observation, and the extra “+1” is there because X ’s left-most column vector has all values exactly equal to 1. This column vector multiplies with β_0 .

The Multivariate Linear Model

due Nov 28, 2016 05:00 IST

**Module 9: Homework**

due Nov 21, 2016 05:00 IST



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