Lecture 4: Concepts Q1

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Concepts

1.

(a)

For a fixed value of $X_2 = c$, $f(X) = \beta_0 + \beta_1 X_1 + \beta_2 c + \beta_3(\frac{1}{c})X_1$, so the "slope" of X_1 is $\beta_1 + \frac{1}{c}\beta_3$.

(b)

For a fixed value of $X_1 = d$, $f(X) = \beta_0 + \beta_1 d + \beta_2 X_2 + \beta_3 d(\frac{1}{X_2})$, so the "slope" of X_2 is $\beta_2 - \frac{\beta_3 d}{X_2(1+X_2)}$.