QUICK QUESTION 3 (3/3 points)

Suppose the coefficients of a logistic regression model with two independent variables are as follows:

$\beta_0 = -1.5, \quad \beta_1 = 3, \quad \beta_2 = -0.5$

And we have an observation with the following values for the independent variables:

$x_1 = 1, \quad x_2 = 5$

What is the value of the Logit for this observation? Recall that the Logit is log(Odds).

-1

-1

Answer: -1

EXPLANATION

The Logit is just log(Odds), and looks like the linear regression equation. So the Logit is -1.5 + 3*1 - 0.5*5 = -1.

What is the value of the Odds for this observation? Note that you can compute e^x, for some number x, in your R console by typing exp(x). The function exp() computes the exponential of its argument.

0.3678794

0.3678794

Answer: 0.3678794

EXPLANATION

Using the value of the Logit from the previous question, we have that Odds = e^(-1) = 0.3678794.

What is the value of P(y = 1) for this observation?

0.2689414

0.2689414

Answer: 0.2689414

EXPLANATION

Using the Logistic Response Function, we can compute that P(y = 1) = 1/(1 + e^(-Logit)) = 1/(1 + e^(1)) = 0.2689414.

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