Applied Research Methods II – PMAP 8131

Quiz: Stats Review

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1. (1 point) Calculate the probability of a 45 years old white-collar man being married from the logistic regression output below.

Coefficient	$\hat{\beta}$	$\hat{\sigma}$
constant	0.423	0.011
age	0.021	0.002
male	-0.094	0.043
blue collar	-0.251	0.020
blue collar × male	-0.128	0.037

   A. 70.99%
   B. 73.56%
   C. 75.88%
   D. 78.14%

2. (1 point) Calculate the approximate p-value on the *male* coefficient from the model above.
   A. 0.01
   B. 0.025
   C. 0.05
   D. 0.1

3. (1 point) You accidentally duplicate each observation in your dataset. How does that affect your coefficient and standard error estimates from regression?
   A. Coefficients and standard errors remain the same
   B. Coefficients and standard errors change
   C. Coefficients remain the same, standard errors change
   D. Coefficients change, standard errors remain the same

4. (1 point) Logistic regression assumes a nonlinear relationship between the log-odds of the dependent variable and the explanatory variable.
   A. True
   B. False
   C. It depends on the predictors in the model
   D. It depends on the dependent variable in the model

5. (1 point) You accidentally remove one quarter of your observations in your dataset at random. How does that affect your coefficient and standard error estimates from regression?

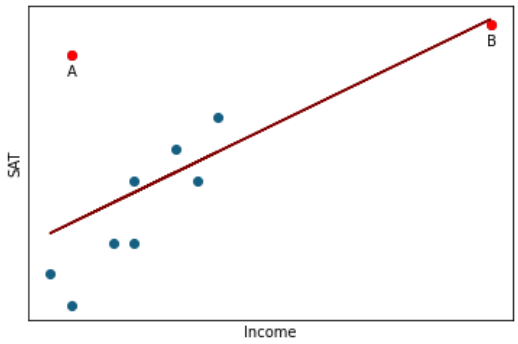
A. Coefficients and standard errors remain the same

B. Coefficients and standard errors change

C. Coefficients remain the same, and standard errors change

D. Coefficients change, and standard errors remain the same

6. (1 point) A regression of SAT test scores on income returns the fit below. Two influential points, A and B, were detected in the upper left corner (A) and in the upper right corner (B) of the scatterplot.



A. A influences the direction of the coefficient, B influences its magnitude

B. A influences the magnitude of the coefficient, B influences its direction

C. Both A and B influence the direction of the coefficient

D. Neither A nor B influences the direction of the coefficient

7. (1 point) A researcher found that specifying the logs of wages as the dependent variable of her model fixes one of the assumptions of linear regression. What assumption was she violating when specifying wages as linear?

A. Linearity

B. Independence

C. Homoskedasticity

D. Normality

8. (1 point) Among international students, female test-takers ($n = 600$) have a success rate of 80% on an English proficiency exam while male students ($n = 400$) have a 60% success rate. One student has recently failed the test, and you bet that the student is male.
What are your chances of winning the bet?

A. 0.41

B. 0.47

C. 0.57

D. 0.70

9. (1 point) Below are some of Mike Tyson's historical betting odds. For those who are not familiar with betting odds, here's an exhaustive explanation.

A. A Tyson win was more likely than a Tyson loss in the Lewis fight

B. A Tyson win was more likely in the Holyfield II fight than it was in the Holyfield I fight

C. Both A) and B) are correct

Fight	**Odds**
Lennox Lewis	+175
Evander Holyfield II	-200
Evander Holyfield I	-1,800
Buster Douglas	-4,300

D. Neither A) nor B) is correct

10. (1 point) Alberto's current weight is 220 lbs. He wonders how many people he needs to encounter on a given day before he meets someone who is heavier than his weight. Assume that weight is normally distributed with a mean of 200 lbs and a standard deviation of 20 lbs.

    A. 7

    B. 15

    C. 16

    D. 20