Feedback — Quiz: Week Five

Help Center

You submitted this quiz on **Mon 20 Apr 2015 5:24 AM PDT**. You got a score of **7.00** out of **7.00**.

Question 1

Which of the following is a form of multiple linear regression equation?

Your Answer		Score	Explanation
y = $\beta_0 + \beta_1 X_1 + \beta_2 X_1 + \ldots + \beta_k X_1$			
y = $\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k$	✔	1.00	Great job! This response is correct because there are K different variables
y = $\beta_0 + \beta_1 X_1$			
Total		1.00 / 1.00	

Question 2

In case of multiple linear regression, the mean value of Y at $x_1, \ldots, x_k$ is a linear function of $X_1, \ldots, X_k$.

(please answer True or False below)

Your Answer		Score	Explanation
True	✔	1.00	Good job! We know this because $\mu_{y/x1,\ldots x2} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k$
False			

Total	1.00 / 1.00

Question 3

Which of the following is not an inherently linear model?

Your Answer		Score	Explanation
$\mu_{y\|x} = \beta_1 X$			
$\mu_{y\|x} = \beta_0 e^{\beta 1 X}$			
$\mu_{y\|x} = \beta_0 + \beta_1 X_1$			
$\mu_{y\|x1,x2} = e^{\beta 0} + e^{\beta 1 X 1} + e^{\beta 2 X 2}$	✔	1.00	Great job. This response is correct because it cannot be easily transformed into a linear form.
Total		1.00 / 1.00	

Question 4

The total sum of squares (SST) remains unchanged irrespective of the number of independent variables.

(please answer True or False below)

Your Answer		Score	Explanation
True	✔	1.00	Great job! We know this because the SST is the sum of squared deviations about the grand mean.
False			
Total		1.00 / 1.00	

Question 5

If the tolerance is 0.0001 then it implies that there is no multicollinearity between the independent variables.

(please answer True or False below)

Your Answer		Score	Explanation
○ True			
◉ False	✔	1.00	Good job! We know this to be false because if the tolerance is less than 0.01, then it indicates multicollinearity. In this case, 0.0001 < 0.01
Total		1.00 / 1.00	

Question 6

Suppose that $F = 4$ where $F =$ (MS regression) / (MS Residual). Then R^2 is:

Your Answer		Score	Explanation
○ 0.64			
◉ 0.8	✔	1.00	Nice work! We know that $F = R^2/(1-R^2)$ So, if we let w represent R^2, then we can say that $4 = w/(1-w)$ which we can solve to show that $w = 0.8$
○ 0.2			
○ The given information is not sufficient to calculate R^2			

Total	1.00 / 1.00

Question 7

Suppose the following:

After running some analysis, the result of the partial F-test for a particular variable was: F = 8.9 and the result of the t-test for the variable under consideration was: t-test = 0.01.

This statement is:

(please answer True or False below)

Your Answer		Score	Explanation
○ True			
◉ False	✔	1.00	Great job! We know this is false because the partial F-test and its respective t-test are equivalent. $F = t^2$
Total		1.00 / 1.00	