Homework 1: Quiz format for True/False

Started: May 13 at 11:58pm

Quiz Instructions

Due: May 25, 04:59 UTC (May 24, 23:59 EST)

[Time converter ☑ (https://www.timeanddate.com/worldclock/converter.html? iso=20180528T040000&p1=1440&p2=tz_et)]

Attenti	on: You only have ONE attempt to answer the True/False questions.	
_ [
	True/False	
L		
	Question 1	1.5 pts
	The prediction interval of one member of the population will always be la the confidence interval of the mean response for all members of the pop when using the same predicting values.	_
	√ True	
	False	
L		
	Question 2	1.5 pts
	In ANOVA, the linearity assumption is assessed using a plot of the response	onse

against the predicting variable.	
○ True	
√ False	
Question 3	1.5 pts
If the model assumptions hold, then the estimator for variable.	the variance, $\hat{\sigma}^2$, is a random
○ False	
Question 4	1.5 pts
Question 4 The mean sum of squared errors in ANOVA measure	
The mean sum of squared errors in ANOVA measure	
The mean sum of squared errors in ANOVA measure V True	
The mean sum of squared errors in ANOVA measure V True	1.5 pts s variability within groups. 1.5 pts

○ True	
√ False	
Question 6	1.5 p
The sampling distribution for the vari χ^2 (chi-squared) regardless of the as	ance estimator in simple linear regression is ssumptions of the data.
○ True	
√ False	
√ False	
	1.5 p
	1.5 p
Question 7	1.5 p
Question 7 \hat{eta}_1 is an unbiased estimator for eta_0 .	1.5 p
Question 7 \hat{eta}_1 is an unbiased estimator for eta_0 .	1.5 p

	O Truo	
	√ True	
	O False	
	Question 9	1.5 p
	Under the normality assumption, the estimator for eta_1 is a linear combina normally distributed random variables.	tion of
	√ True	
	False	
	Question 10	1.5 p
	An ANOVA model with a single qualitative predicting variable containing will have $m{k+1}$ parameters to estimate.	$m{k}$ groups
	▼ True	
	○ False	
_	Question 11	1.5 p

○ True	
√ False	
Question 12	1.5 p
The pooled variance estimator, s_{pooled}^2 , in ANC estimator, $\hat{\sigma}^2$, in simple linear regression becareror (MSE) for their calculations.	
O False	
Question 13	1.5 p
The normality assumption states that the resp	onse variable is normally distributed

Question 14	1.5 pt
If the constant variance assumption equality of the means will not be rel	in ANOVA does not hold, the inference on the iable.
▼ True	
○ False	
Question 15	1.5 pt
A negative value of eta_1 is consistent predictor variable and the response	with an inverse relationship between the variable.
• **	
predictor variable and the response	
predictor variable and the response	
predictor variable and the response ✓ True ✓ False Question 16	variable.
predictor variable and the response ✓ True ✓ False Question 16	variable. 1.5 pt

	Question 17	1.5 pts
	We assess the constant variance assumption by plotting the error terms, against fitted values.	$arepsilon_i$,
	○ True	
	√ False	
	Question 18	1.5 pts
	Question to	1.5 μισ
	With the Box-Cox transformation, when $\lambda=0$ we do not transform the re	esponse.
	○ True	
	√ False	
	Multiple Choice	
L		
	Question 19	1 pts
	The sampling distribution of $\hat{oldsymbol{eta}}_0$ is a	

chi-squared distribution		
onormal distribution		
None of the above		

Question 20	2 pts
A data point far from the mean of the x's and y's is always:	
an influential point and an outlier	
a leverage point but not an outlier	
an outlier and a leverage point	
an outlier but not a leverage point	

The following output was captured from the summary output of a simple linear regression model that relates the duration of an eruption with the waiting time since the previous eruption.

Question 21	2
Using the table above, what is the standard erro rounded to three decimal places?	r of the intercept, labeled A , an
O 2.336	
♥ 0.808	
0.806	

Question 22	2 pts
Using the table above, what is the t-value of the coefficient for waiting, label and rounded to three decimal places?	ed B ,
∨ 3.939	
O 3.931	
O 3.935	
None of the above	

$\supset $	Question 23	2 pts
	The alternative hypothesis of ANOVA can be stated as,	
	the means of all pairs of groups are different	
	the means of all groups are equal	
	√ the means of at least one pair of groups is different	
	None of the above	

	Question 24				2 pts
*	The F-test is a freedom.	tailed test with	and	_ degrees of	
	one, k, N-1				
	o two, k-1, N-k				
	○ two, k, N-1				
	None of the above.				

Question 25 2 pts

To test if a coefficient is less than a critical value, C, we conduct a one-sided test

on the	tail of a	distribution.	
left, normal			
V left, t			
right, normal			
right, t			
None of the a	bove		

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