Started on	Friday, 7 October 2022, 12:16 PM
State	Finished
Completed on	Friday, 7 October 2022, 12:30 PM
Time taken	13 mins 53 secs
Grade	**1.00** out of 1.00 (**100**%)

The standard error measures the

a. variability in the dependent variable around the fitted regression function.

b. variability in the actual data around the fitted regression function. ✔

c. variability in the X values.

d. variability in the independent variable around the fitted regression function.

The correct answer is: variability in the actual data around the fitted regression function.

Error sum of squares (ESS) is computed as

a. $\sum_{i=1}^{n}(\hat{Y}_i - X_i)$

b. $\sum_{i=1}^{n}(\hat{Y}_i - Y_i)$

c. $\sum_{i=1}^{n}(Y_i - \hat{Y}_i)^2$ ✔

d. $\sum_{i=1}^{n}(\hat{Y}_i - Y_i)^2$

Your answer is correct.

The correct answer is:

$\sum_{i=1}^{n}(Y_i - \hat{Y}_i)^2$

$\sum_{i=1}(Y_i - Y_i)^-$

How is mean absolute deviation calculated?

a. $\sum_i \frac{(Y_i - \hat{Y}_i)^2}{n}$

b. $\sum_i \frac{|Y_i - \hat{Y}_i|^2}{n}$

c. $\sum_i \frac{(Y_i - \hat{Y}_i)}{n}$

d. $\sum_i \frac{|Y_i - \hat{Y}_i|}{n}$ ✔

Your answer is correct.

The correct answer is:

$\sum_i \frac{|Y_i - \hat{Y}_i|}{n}$

The r correlation coefficient

a. gives the proportion of the variation of one variable that is predictable from the other variable.

b. measures the strength and the direction of a linear relationship between two variables. ✔

c. measures the variability in the actual data around the fitted regression function.

d. can take any value between 0 and 1.

The correct answer is: measures the strength and the direction of a linear relationship between two variables.

Suppose that we calculate the four-period moving average of the following time series:

t	1	2	3	4	5	6
y_t	17	27	22	16	25	13

The centred moving average for period 4 is:

a. 21.5

b. 20.75 ✔

c. 19

d. 22.5

Your answer is correct.

The correct answer is:
20.75

A time-series which has no significant upward or downward trend is referred to as

a. non-stationary.

b. static.

c. stationary. ✔

d. non-moving.

The correct answer is: stationary.

Based on the following regression output, what is the equation of the regression line?

Regression Statistics					
Multiple R	0.99313				
R Square	0.98630				
Adjusted R Square	0.98238				
Standard Error	2.94802				
Observations	10				
ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	4379.182	2189.591	251.943	0.0000
Residual	7	60.836	8.691		
Total	9	4440.017			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	14.169	3.856	3.674	0.008	5.050
X Variable 1	0.985	0.114	8.607	0.000	0.714
X Variable 2	0.995	0.057	17.498	0.000	0.860

a. $\acute{Y}_i = 0.995 + 14.169\ X_{1i} + 0.985\ X_{2i}$

b. $\acute{Y}_i = 3.856 + 0.114\ X_{1i} + 0.057\ X_{2i}$

c. $\acute{Y}_i = 14.169 + 0.114\ X_{1i} + 0.057\ X_{2i}$

d. $\acute{Y}_i = 14.169 + 0.985\ X_{1i} + 0.995\ X_{2i}$ ✔

Your answer is correct.

The correct answer is:
$\hat{Y}_i = 14.169 + 0.985\ X_{1i} + 0.995\ X_{2i}$

A technique that analyzes past behavior of a time series variable to predict the future is referred to as

a. an extrapolation model. ✔

b. a past performance model.

c. a regression model.

d. a seasonal model.

The correct answer is: an extrapolation model.

Regression analysis is a modeling technique

a. for analyzing the relationship between dependent and independent variables. ✔

b. that assumes all data is normally distributed.

c. for capturing uncertainty in predicted values of Y.

d. for examining linear trend data only.

The correct answer is: for analyzing the relationship between dependent and independent variables.

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