*This is a required activity and will count toward course completion.

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	2 minutes	6 out of 6
LATEST	Attempt 2	2 minutes	6 out of 6
	Attempt 1	12 minutes	4 out of 6

Answers will be shown after your last attempt

Score for this attempt: **6** out of 6 Submitted May 3 at 12:02pm This attempt took 2 minutes.

1 / 1 pts
⁹ Select all

That is correct! A *p* value of less than 0.05 and a confidence interval that does not contain 0 are equivalent.

Question 2 1 / 1 pts

Which is the correct confidence interval?

=======		-	_			
Dep. Variabl 0.890	e:	sal	Les R	k-squa	red:	
Model:		(DLS A	Adj. R	-squared:	
0.867 Method:		Least Squar	es F	-stat	istic:	
38.68	.,	•				
Date: 1.01e-10	Мо	n, 27 Jun 20	022 P	rob (F-statistic	:):
Time:		17:18:	:56 L	og-Li	kelihood:	
-81.394 No. Observat	ions:		30 A	AIC:		
174.8						
Of Residuals 183.2	:		24 B	RTC:		
Df Model:	·		5			
Covariance T ======		nonrobเ =======				
======	soof	std err		_	D. 1±1	[0.025
0.975]	coei	sta err		ι	P>ILI	[0.023
const	-90.1059	18.349	-4.9	911	0.000	-127.976
-52.236	0 2050	0.029	7 0	2/1	0.000	0.146
score 0.266	0.2039	0.029	7.6) + 1	0.000	0.140
age 8.026	6.0880	0.939	6.4	182	0.000	4.150
stress 1.299	0.3003	0.484	0.6	521	0.541	-0.698
experience 1.742	0.0766	0.807	0.0	95	0.925	-1.589
gpa 3.231 	-0.4549	1.786	-0.2	255	0.801	-4.141
 Omnibus:		6.2	287 D	 Ourbin	-Watson:	
1.613 Prob(Omnibus):				-Bera (JB):	
4.723 Skew:		0.9	929 F	Prob(J	B):	
0.0943 Kurtosis: 1.42e+03		3.5	570 C	Cond.	No.	

Age	[4.150, 0.266]			
Stre	ss: [-0.697, 1.3]			
Sco	re [-4.150, 8.026]			
● GPA	: [-4.141, 3.231]			
That is	correct! The confide	nce interval fo	or GPA is [-4.141,	3.231].

Questi	on 3	1 / 1 pts
	es it mean when we say a variable is significant fo ce? Select all that apply.	or 95%
	are 95% confident that the confidence interval contains the lation parameter.	e true
П	he confidence interval includes a 0.	
✓ T	he confidence interval does not contain a 0.	
	are 95% confident that the confidence interval does not co population parameter.	ontain the

That is correct! A *p* value of less than 0.05 is associated with 95% confidence. This is equivalent to a confidence interval that does not cross 0. The difference is that the confidence interval provides more information by showing the range in which the true value will occur.

Question 4 1 / 1 pts

A college is seeking to model cafeteria sales based on several student predictor variables. How can you identify possible overfitting using the available information?

Please note the regression output and correlation table below.(Assume the correlation is moderate to strong at or above 0.65.)

======= D		-	1	D		
Dep. Variabl 0.890	.e:	sa	les	R-squa	red:	
0.890 Model: 0.867		(OLS .	Adj. R	R-squared:	
Method:		Least Squai	res	F-stat	istic:	
38.68 Date:	Мо	n, 27 Jun 20	022	Prob (F-statisti	c):
1.01e-10 Time:		17:18	:56	Log-Li	kelihood:	
-81.394 No. Observat	ions:		30	AIC:		
174.8 Df Residuals	5:		24	BIC:		
183.2 Df Model: Covariance] ========	Гуре:	nonrobi	5 ust			
====== 0.975]	coef	std err		t	P> t	[0.025
 const -52.236	-90.1059	18.349	-4.	911	0.000	-127.976
score 0.266	0.2059	0.029	7.	041	0.000	0.146
age 8.026	6.0880	0.939	6.	482	0.000	4.150
8.026 stress 1.299	0.3003	0.484	0.	621	0.541	-0.698
エ・ムンン		0.807		095	0.925	-1.589

1.742 gpa 3.231	-0.4549	1.786 -	C		
Omnibus:		6.287	Durbir	n-Watson:	
1.613 Prob(Omni	bus):	0.043	Jarque	e-Bera (JB):	
4.723 Skew: 0.0943		0.929	Prob(J	IB):	
Kurtosis: 1.42e+03		3.570	Cond.	No.	
Correlati experienc	on Matrix sales e gpa	score		age	stress
sales	1.000000 .549834		19	0.788887	-0.233
			00	0.216618	-0.147
age 808 0		0.2166 0.675425	18	1.000000	-0.286
stress	-0.233564 0.276569 -	-0.147	833	-0.286808	1.0000
experienc	e 0.549834 .000000 0	0.3435	15	0.541611	-0.276
gpa		0.3334	66	0.675425	-0.131

- O Look for a p value greater than 0.05.
- Look for two variables correlated above 0.65.
- Look for a p value of less than 0.05.
- Look for two variables correlated below 0.65.

That is correct! Multicollinearity is a high correlation between independent variables. Two highly correlated independent variables may be measuring the same thing, dramatically altering the coefficients and p values of each variable and making them unreliable. This adds to the complexity of the model, which can lead to overfitting.

Question 5 1 / 1 pts

Using the data in the OLS regression results, how would you address overfitting in this case?

Dep. Variable 0.890	:	:	sales	R-squ	ared:	
Model: 0.867			0LS	Adj. F	R-squared:	
Method:		Least Sq	uares	F-sta	tistic:	
38.68 Date:	Moi	n, 27 Jun	2022	Prob ((F-statistic):
1.01e-10 Time:		17:	18:56	Log-Li	ikelihood:	
-81.394 No. Observati	ons:		30	AIC:		
174.8 Df Residuals:			24	BIC:		
183.2 Df Model:			5			
Covariance Ty	/pe: =======	nonro	obust ======			
	coef	std err		t	P> t	[0.025
0.975] 						
const -52.236	-90.1059	18.349	-4	.911	0.000	-127.976
score	0.2059	0.029	7	.041	0.000	0.146
0.266 age	6.0880	0.939	6	.482	0.000	4.150
8.026 stress 1.299	0.3003	0.484	0	. 621	0.541	-0.698
experience 1.742	0.0766	0.807	0	. 095	0.925	-1.589
gpa 3.231	-0.4549	1.786	-0	. 255	0.801	-4.141
======= ==============================			 5.287	 Durbir	 n-Watson:	
1.613 Prob(Omnibus)) :		0.043		e-Bera (JB):	
4.723 Skew:			0.929	Prob(
0.0943 Kurtosis: 1.42e+03			3.570	Cond.		
				=====		
Correlation M	latrix sales		score		000	c+noce
	Sules	:	SCOLE		age	stress

0.549834	0.621	L784		
0.67	3719	1.000000	0.216618	-0.147
0.343515	0.333	3466		
0.78	8887	0.216618	1.000000	-0.286
0.541611	0.675	5425		
-0.2	33564	-0.147833	-0.286808	1.0000
-0.276569	-0.13	31167		
nce 0.54	9834	0.343515	0.541611	-0.276
1.000000	0.312	2129		
0.62	1784	0.333466	0.675425	-0.131
0.312129	1.000	0000		
r	0.67 0.343515 0.78 0.541611 -0.27 -0.276569 nce 0.54 1.000000 0.62	0.673719 0.343515 0.788887 0.541611 0.675 -0.233564 -0.276569 -0.13 0.621784	0.673719 1.000000 0.343515 0.333466 0.788887 0.216618 0.541611 0.675425 -0.233564 -0.147833 -0.276569 -0.131167 nce 0.549834 0.343515 1.000000 0.312129 0.621784 0.333466	0.673719 1.000000 0.216618 0.343515 0.333466 1.000000 0.788887 0.216618 1.000000 0.541611 0.675425 -0.233564 -0.147833 -0.286808 -0.276569 -0.131167 -0.549834 0.343515 0.541611 1.000000 0.312129 0.621784 0.3333466 0.675425



Drop one variable at a time and rerun the model each time until all of the coefficients are significant.

- Drop the one non-significant variable and rerun the model.
- Drop one variable at a time and rerun the model each time until most of the coefficients are significant.
- Orop the one non-significant variable, but do not rerun the model.

That is correct! To develop a final equation with which you can infer to the population and apply to unseen data, all of the coefficients must be significant (the p value is below 0.05 for a standard model). As all of the p values will change every time you drop a variable and rerun the model, this process must be repeated until all of the coefficients are significant.

Question 6 1 / 1 pts

A college is seeking to model cafeteria sales based on several student predictor variables. The following output from the latest run of a regression model has been handed to you for interpretation. Which of the variables is/are not statistically significant? Select all that apply.

OLS Regressi	======================================	========				
===== Dep. Variabl	۵.	col	Δ¢	R-squ	ared:	
0.890	c.	Sut				
Model: 0.867					R-squared:	
Method: 38.68		Least Squar	es	F-sta	tistic:	
Date:	Мо	n, 27 Jun 20)22	Prob	(F-statistic	:):
1.01e-10 Time: -81.394		17:18:	56	Log-L	ikelihood:	
No. Observat 174.8	ions:		30	AIC:		
Of Residuals 183.2	:		24	BIC:		
Df Model: Covariance T	ype:	nonrobu	5 ist			
		========				
0.975]					P> t	_
const -52.236					0.000	-127.976
score 0.266	0.2059	0.029	7.	041	0.000	0.146
age 3.026	6.0880	0.939	6.	482	0.000	4.150
stress	0.3003	0.484	0.	621	0.541	-0.698
1.299 experience 1.742	0.0766	0.807	0.	095	0.925	-1.589
gpa 3.231	-0.4549	1.786	-0.	255	0.801	-4.141
Omnibus: 1.613		6.2	287	Durbi	n-Watson:	
Prob(Omnibus 4.723):	0.0)43	Jarqu	e-Bera (JB):	
Skew: 0.0943		0.9	29	Prob(JB):	
Kurtosis: 1.42e+03		3.5	570	Cond.	No.	
☑ GPA						
Age						
Experie	ence					

Stress

That is correct! Stress, experience, and GPA contain a p-value greater than 0.05.

Quiz Score: 6 out of 6

Top Questions	
	It's all empty here! If you have any questions ask one