

1. Your friend estimated a regression model using Stata and sent you the following table

Source	SS	df	MS			
Model	(a)	4	11.3251329	Number of obs =	475	
Residual	87.5332199	470	.186240893	F(4, 470) =	60.81	
Total	132.833752	474	.280239982	Prob > F =	0.0000	
				R-squared =	(b)	
				Adj R-squared =	0.3354	
				Root MSE =	.43156	

lwage	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
educ	.0919043	.0076498	12.01	0.000	.0768722	.1069364
exper	.0341892	.0057343	5.96	0.000	.0229211	.0454573
expersq	-.0005759	.000124	-4.65	0.000	-.0008195	-.0003322
married	.1393608	.0455167	(c)	0.002	.0499194	.2288022
_cons	.0718478	.1077679	0.67	0.505	-.1399187	.2836143

lwage is the log of average hourly earnings, **educ** is years of education, **exper** is years of potential experience, **expersq** is the square of exper, and **married** =1 if the person is married, zero otherwise.

- Please fill-in the blanks marked as (a), (b), and (c) on the table
 - What is the coefficient of determination? What does this number tell us?
 - What will happen to expected wage if education went down by one year?
 - Is the coefficient for “married” statistically significant? What is the meaning of this coefficient?
 - What will happen to the expected value of the dependent variable if experience went up by one year?
- In about 200 words, explain to someone who has never studied statistics what multiple regression does and how it can be useful.
 - Use the Arcadia SAT data of exercise #2 (P:\QAC\SUMMER10\ASGN\satarcadia.dta) to answer the following questions:
 - Calculate the average SAT score for each level of “ESL”
Which group has a higher average?
 - Estimate the following model $SAT = a + b \cdot esl_n$
Where esl_n is one if ESL is “Yes”, zero otherwise
What is the meaning of the estimated coefficient (b) for esl_n ?
 - Now estimate the model $SAT = a + b_1 \cdot esl_n + b_2 \cdot GPA$
What is the meaning of the estimated coefficient (b1) for esl_n ? Is this result what you expected given your answers on a and b? What accounts for the differences? Please discuss.