STAT 201
Homework Assignment 7
Due: before 11:59pm on April 21st

Quick Test

Example: Recall the margarine and divorce dataset.

Use the Excel data for the following:

a. Determine the estimate $(E[\widehat{Divorce.rate}] = \hat{\beta}_0 + \hat{\beta}_1 Marg.consumed)$ of the simple linear regression model: $Divorce.rate = \beta_0 + \beta_1(Marg.consumed) + \varepsilon$
b. What is the coefficient of determination? Interpret this.

Which variables are significant (statistically) predictors of Divorce rate:

c. What is the estimate of β_1? What is the interpretation of this estimate in the context of this model?
d. What is the 95% confidence interval estimate for β_1 ? What does this say about the hypothesis that $\beta_1 \neq 0$
e. At a 0.05 significance level, use Excel output from the coefficients table to test H_o: $\beta_1 = 0$ against H_a: $\beta_1 \neq 0$
f. At a 0.05 significance level, use the ANOVA table to test H_o: $\beta_1 = 0$ against H_a: $\beta_1 \neq 0$

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0.931603186					
R Square	0.867884496					
Adjusted R	0.851370059					
Standard E	0.138646333					
Observatic	10					
ANOVA						
	df	*SS*	*MS*	*F*	*ignificance F*	
Regressior	1	1.010217554	1.010218	52.55308	8.81E-05	
Residual	8	0.153782446	0.019223			
Total	9	1.164				
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	3.076638803	0.179702893	17.1207	1.38E-07	2.662243	3.491034
Margarine	0.235701716	0.032513497	7.24935	8.81E-05	0.160725	0.310678