This is Exercise 1.12.2 in the notes. These are things you should have learned in the prerequisite course.

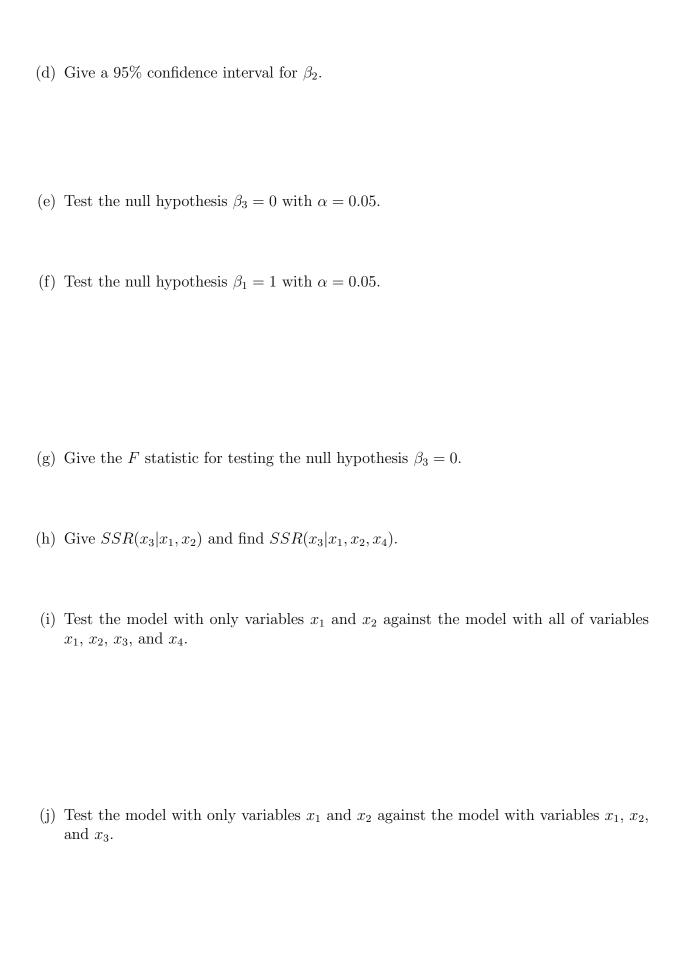
The information below relates y, a second measurement on wood volume, to x_1 , a first measurement on wood volume, x_2 , the number of trees, x_3 , the average age of trees, and x_4 , the average volume per tree. Note that $x_4 = x_1/x_2$. Some of the information has not been reported, so that you can figure it out on your own.

Table of Coefficients								
Predictor	$\hat{eta}_{m{k}}$	$\operatorname{SE}(\hat{\beta}_k)$	t	P				
Constant	23.45	14.90		0.122				
x_1	0.93209	0.08602		0.000				
x_2		0.4721	1.5554	0.126				
x_3	-0.4982	0.1520		0.002				
x_4	3.486	2.274		0.132				

Analysis of Variance						
Source	df	SS	MS	F	P	
Regression	4	887994			0.000	
Error						
Total	54	902773				

		Sequential
Source	df	SS
$\overline{x_1}$	1	883880
x_2	1	183
x_3	1	3237
x_4	1	694

- (a) How many observations are in the data?
- (b) What is R^2 for this model?
- (c) What is the mean squared error?



- (k) Should the test in part (g) be the same as the test in part (j)? Why or why not?
- (l) For estimating the point on the regression surface at $(x_1, x_2, x_3, x_4) = (100, 25, 50, 4)$, the standard error of the estimate for the point on the surface is 2.62. Give the estimated point on the surface, a 95% confidence interval for the point on the surface, and a 95% prediction interval for a new point with these x values.

(m) Test the null hypothesis $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ with $\alpha = 0.05$.