

Name: \_\_\_\_\_  
 MAT 222  
 Spring 2019  
 Quiz 8

*“Looking in the mirror, staring back at me, isn’t so much a face as the expression of a predicament.”*  
 – George Falconer, *A Single Man*

**Problem 1:** As cheese ages, various chemical reactions take place that affect the taste of the final product. A researcher is trying to predict the final quality of cheese (given some qualitative metric) based on the log amount of acetic acid, the log concentration of hydrogen sulfide (H<sub>2</sub>S), and the concentration of lactic acid. The results of the regression are given (partially) below.

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	___	4994.5	_____	_____	_____
Error	___	2668.4	102.6		
Total	29	7662.9			

Model Summary

S	R-sq	R-sq (adj)
_____	_____ %	61.2%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value
Constant	_____	19.74	-1.46	0.155
acetic	0.328	_____	0.07	0.942
H <sub>2</sub> S	3.912	1.248	_____	_____
lactic	19.671	8.629	2.28	0.031

The regression equation is

$$\text{taste} = -28.88 + 0.328 \text{ acetic} + 3.912 \text{ H}_2\text{S} + 19.671 \text{ lactic}$$

- (a) Complete the missing entries in the table above.
- (b) Perform an *F*-test for this regression. Be sure to state the null and alternative hypotheses, the test statistic, the degrees of freedom (of the numerator and denominator), and the conclusions using a 5% significance level.