Name: _____
MAT 222
Spring 2019
Homework 9

"Yeah, Mr. White! Yeah, Science!"
–Jesse Pinkman, Breaking Bad

Problem 1: A research group is trying to predict the average amount of hours it takes to fully 'adapt' to a new work environment using the number of minutes spent in work training, the amount of minutes spent in computer training, and the amount of time spent reviewing orientation materials.

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	___	10037.1	3345.7	_____	0.000
Train	___	_____	4102.8	23.53	0.000
Computer	___	6259.8	_____	35.91	0.000
Review	___	806.5	806.5	4.63	0.036
Error	___	8716.6	_____		
Total	53	18753.7			

Model Summary

S	R-sq	R-sq (adj)	R-sq (pred)
_____	_____%	50.73%	0.00%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	25.14	4.93	_____	0.000	
Train	_____	0.00530	-4.85	0.000	7.89
Computer	0.03137	0.00523	5.99	_____	8.19
Review	-0.891	0.414	-2.15	0.036	1.15

The regression equation is

$\texttt{Adapt} = 25.14 - 0.02571\ \texttt{Train} + 0.03137\ \texttt{Computer} - 0.891\ \texttt{Review}$

(a) Fill in the missing entries above.

(b) What is the average adjustment time for someone that spent 1.5 hours in training, 10 hours in computer training, and spent 30 minutes reviewing orientation materials?

(c) What is the correlation coefficient for this model?

(d) What was the total number of subjects examined to create this model?

(e) Construct a 95% confidence interval for β_2.

(f) Find the value of $\sum(x_i - \overline{x})^2$ for this data.

(g) Perform the F-test for this model. State your null and alternative hypotheses, F-statistic, degrees of freedom of the numerator/denominator, p-value, and conclusion.