AS1: Assignment 1, ANOVA

RESEARCH SCENARIO:

1. A randomized study was conducted comparing the effects of repetition on recall. Conditions included the following number of repetitions per list of words: 5 times, 10 times, 15 times, and 20 times.

   (a) What is (are) the factor(s) in this study? _____

   (b) How many levels (if any) does (do) the factor(s) have? _____

   (c) What is the dependent variable? _____

2. What is the research design? _____

3. What is the appropriate hypothesis test to analyze these data?_____

4. In which source of variance would you expect the treatment effect?
   _____
   _____
   _____

   Below is an SPSS ANOVA: Based on these results, please answer a-f

ANOVA

VAR00001

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.267	2	8.133		.007
Within Groups	37.100	27	1.374		
Total	53.367	29			

Multiple Comparisons

Dependent Variable: VAR00001

Bonferroni

(I) VAR00002	(J) VAR00002	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-1.00000	.52423	.201	-2.3381	.3381
	3.00	-1.80000*	.52423	.006	-3.1381	-.4619
2.00	1.00	1.00000	.52423	.201	-.3381	2.3381
	3.00	-.80000	.52423	.416	-2.1381	.5381
3.00	1.00	1.80000*	.52423	.006	.4619	3.1381
	2.00	.80000	.52423	.416	-.5381	2.1381

*. The mean difference is significant at the 0.05 level.

(a) What is the value of the variance between? _____

(b) What is the value of the variance within? _____

(c) What is the F value (I know it is not there, calculate it): _____

(d) Please write the statistical statement for the above SPSS ANOVA results:

Answer: _____

(e) Is your F test significant? Yes _____ No_____

(f) If yes, please note where the significance is found:

_____
_____
_____

RESEARCH SCENARIO 2:
A researcher hypothesizes that exam performance is affected by the amount of time that a student reviews the quiz material immediately prior to the quiz. He randomizes his sample of n=30 participants to a 10 minutes condition, a 20 minutes condition, and a 30 minutes condition, after which all students take the quiz. The data are below:

10 m	20 m	30 m
86	94	92
78	91	91
55	82	68
88	15	65
77	85	78
65	72	81
60	78	83
64	74	69
72	70	74
84	83	83

l. What is the factor in this study? _____

2. What is the dependent variable in this study? _____

3. What is the research hypothesis?
_____

4. What is the null hypothesis?
_____

5. What is the name of the research design?
_____

6. Run the appropriate SPSS test and cut and paste your SPSS results here:

7. Based on your SPSS results, what is MS between? _____

8. Based on your SPSS results, what is MS within? _____

9. What is the F value? _____

10. Please write the “statistical statement” for your SPSS analysis:

Answer: _____

11. Were your results significant? Yes _____ No _____

12. If yes, which groups showed a statistical difference?

_____
_____
_____
_____
_____
_____