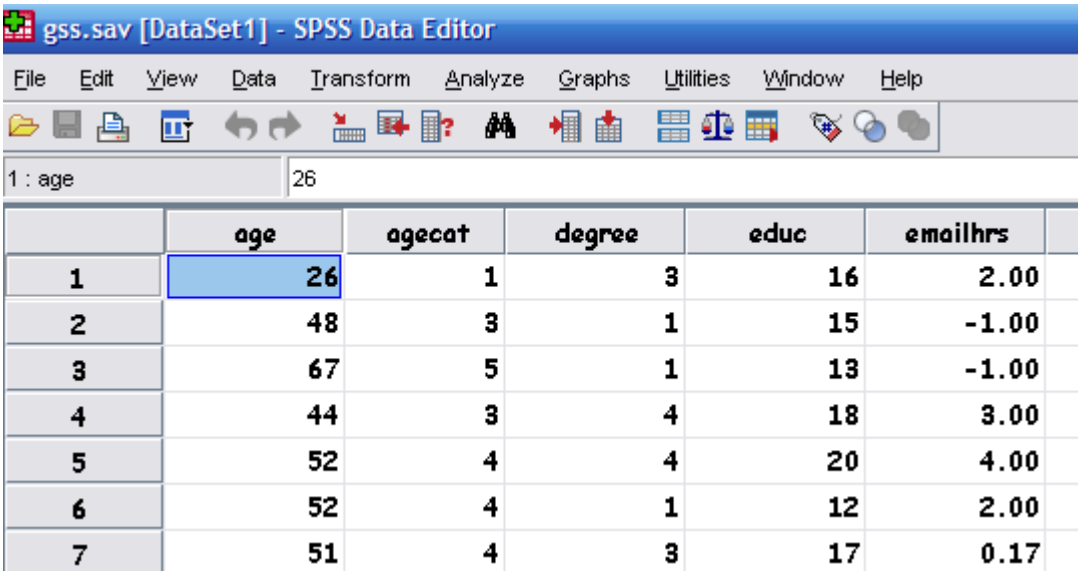
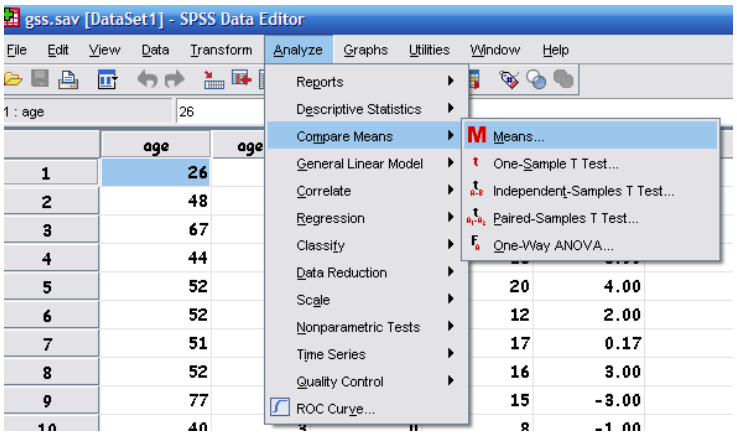
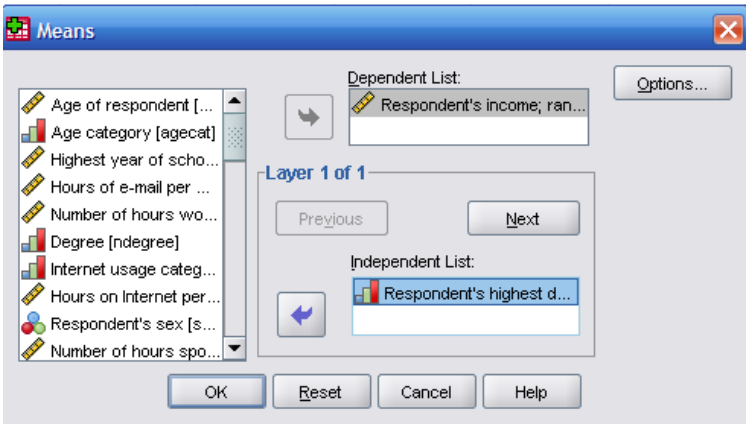


	age	agecat	degree	educ	emailhrs
1	26	1	3	16	2.00
2	48	3	1	15	-1.00
3	67	5	1	13	-1.00
4	44	3	4	18	3.00
5	52	4	4	20	4.00
6	52	4	1	12	2.00
7	51	4	3	17	0.17

Open the GSS.sav file from the CD in the Norusis book (get the file from your instructor if you are missing the CD).



Go to ANALYZE → COMPARE MEANS → MEANS



Choose RINCDOL as the dependent variable and DEGREE as the independent variable. Choose OK.

Case Processing Summary

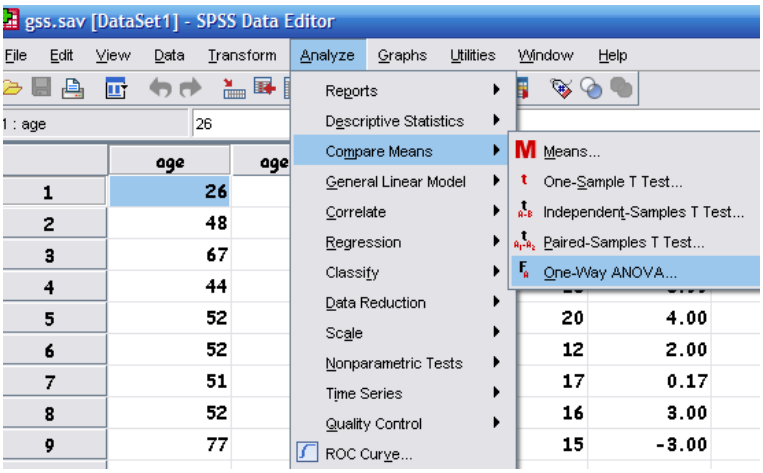
	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Respondent's income; ranges recoded to midpoints * Respondent's highest degree	917	64.6%	502	35.4%	1419	100.0%

You now have the output needed for part "a".

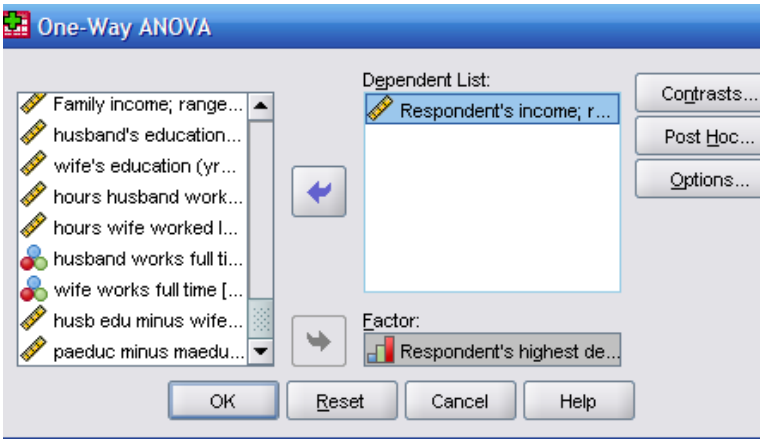
Report

Respondent's income; ranges recoded to midpoints

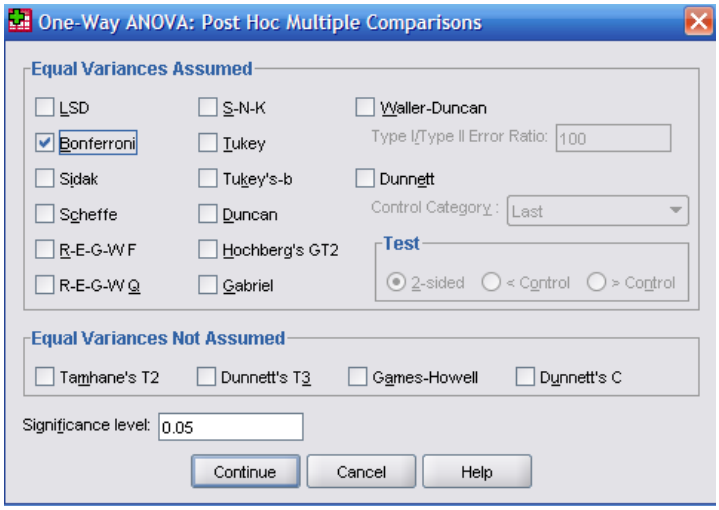
Respondent's	Mean	N	Std. Deviation
Less than HS	17366.97	109	16683.102
High school	26468.14	463	19488.027
Junior college	32288.46	78	21340.547
Bachelor	39250.00	193	25225.313
Graduate	58128.38	74	31156.456
Total	31126.50	917	24079.125



Now go to ANALYZE → COMPARE MEANS → ONE-WAY ANOVA



Choose RINCDOL as the dependent variable and DEGREE as the factor. Choose the POST HOC button.



Choose the BONFERRONI option and CONTINUE and OK.

NOTE: Any of the Post Hoc tests will work, and you may have a favorite, but for now, choose Bonferroni so as to match the professor's solutions.

ANOVA

Respondent's income; ranges recoded to midpoints

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.748E10	4	2.437E10	51.255	.000
Within Groups	4.336E11	912	4.755E8		
Total	5.311E11	916			

Post Hoc Tests

Multiple Comparisons

Respondent's income; ranges recoded to midpoints
Bonferroni

(I) Respondent's highest degree	(J) Respondent's highest degree	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Less than HS	High school	-9101.170*	2321.413	.001	-15633.35	-2568.99
	Junior college	-14921.489*	3233.840	.000	-24021.13	-5821.85
	Bachelor	-21883.028*	2612.581	.000	-29234.52	-14531.53
	Graduate	-40761.406*	3284.389	.000	-50003.29	-31519.52
High school	Less than HS	9101.170*	2321.413	.001	2568.99	15633.35
	Junior college	-5820.319	2668.819	.294	-13330.06	1689.42
	Bachelor	-12781.857*	1868.276	.000	-18038.96	-7524.75
	Graduate	-31660.236*	2729.851	.000	-39341.71	-23978.76
Junior college	Less than HS	14921.489*	3233.840	.000	5821.85	24021.13
	High school	5820.319	2668.819	.294	-1689.42	13330.06
	Bachelor	-6961.538	2925.613	.175	-15193.87	1270.79
	Graduate	-25839.917*	3538.481	.000	-35796.78	-15883.05
Bachelor	Less than HS	21883.028*	2612.581	.000	14531.53	29234.52
	High school	12781.857*	1868.276	.000	7524.75	18038.96
	Junior college	6961.538	2925.613	.175	-1270.79	15193.87
	Graduate	-18878.378*	2981.394	.000	-27267.67	-10489.09
Graduate	Less than HS	40761.406*	3284.389	.000	31519.52	50003.29
	High school	31660.236*	2729.851	.000	23978.76	39341.71

Now you have what you need to solve the rest of the problem.

ANOVA assumes independent random samples from each population, normally distributed populations and equality of variance. Here is the first part of the ANOVA output. The null hypothesis being tested is that the average income is the same for all degree groups. With a Sig. Value of .000 which is less than .05, we can reject the null hypothesis and conclude that there is a difference in the average income across the education levels. Since we rejected the null, we need to conduct a Post Hoc test to determine the specific differences.

In the Post Hoc test, the MEAN DIFFERENCE column has values with an asterisk to indicate significant differences (i.e., sig. values less than .05). The LESS THAN HS means are significantly less than all other means. The GRADUATE mean is significantly larger than all other means. And the HIGH SCHOOL mean is significantly less than the BACHELORS mean. In fact, with minimal exception, the higher degrees earn significantly higher incomes than the degrees below. So to answer part d, staying in school does appear to "pay off."