INTERPRETING CORRELATION TABLES

		Exam #1 Score	Exam #3 Score	Age of Respondent	Sex of Respondent
Exam #1 Score	Pearson Correlation	1	.610(**)	.705 (**)	.469(*)
	Sig. (2-tailed)		.004	.001	.037
	N	20	20	20	20
Exam #3 Score	Pearson Correlation	.610(**)	1	.839 (**)	.766(**)
	Sig. (2-tailed)	.004		.000	.000
	N	20	20	20	20
Age of Respondent	Pearson Correlation	.705(**)	.839(**)	1	.709(**)
	Sig. (2-tailed)	.001	.000		.000
	N	20	20	20	20
Sex of Respondent	Pearson Correlation	.469(*)	.766(**)	.709 (**)	1
	Sig. (2-tailed)	.037	.000	.000	
	N	20	20	20	20

This analysis is for the question about the possible relationship between the variables "age" and "exam scores."

The first thing you would do is locate the cell where the 2 variables of interest intersect. "**Age**" is the independent variable, and for your dependent variable "**test scores**" you actually have 2 two pieces of test score information (Exam #1 and Exam #3). So you actually have two related questions:

(1) What was the relationship between "age" and "test score" for Exam #1? (the blue cell); and (2) What was the relationship between "age" and "test score" for Exam #3 (the tan cell)?

SPSS correlation table cells always contain at least 3 pieces of information:
1. The size of the correlation (the "r" statistic), which has a range between -1 (perfect negative correlation) and 1 (perfect positive correlation). If the correlation is "statistically significant" SPSS also flags this number with either a (*) [significant at least at the .05 level] or (**) [significant at least at the .01 level]. If the correlation statistic doesn't have a minus in front of it, that means that the correlation is positive, which means that high scores for both variables go together, and low scores for both variables go together. If the correlation statistic had a minus in front of it, that would mean that as the values of one variable goes up, the values of the other variable goes down (i.e., a negative or inverse correlation).

2. The level of significance for the correlation (a level of .05 or smaller is considered "statistically significant). Remember that the more zeros past the decimal point, the smaller the number is. So, the following levels of significance

are increasingly <u>smaller</u>, and thus <u>more</u> statistically significant: .05, .01, .005, .001. SPSS only shows three numbers past the decimal point, so if you get a significance level of .000 it doesn't mean that the level of significance is absolutely zero. It just means that the number can't be any larger than .0004. If it were larger than that, in SPSS it would round up to .001.

3. The number of subjects that were considered in this particular test.

So in this case, the blue cell (relation of age and Exam 1 scores) shows that you have a postive correlation of .705 between "age" and "Exam 1 scores" (i.e., as age scores went up, Exam 1 scores went up), and that this relationship was statistically significant at the .001 level. In words, that means that older students did significantly better on Exam 1. The tan cell (relation of age and Exam 3 scores) shows a comparable, but even stronger, result. Older students did even better than younger students on Exam 3 than they did on Exam 1.