ANCOVA

- Analysis of covariance (ANCOVA) compares several means adjusted for the effect of one or more other variables (called *covariates*); for example, if you have several experimental conditions and want to adjust for the age of the participants.

- Before the analysis check that the independent variable(s) and covariate(s) are independent. You can do this using ANOVA or a *t*-test to check that levels of the covariate do not differ significantly across groups.

- In the table labelled *Tests of Between-Subjects Effects*, look at the column labelled *Sig.* for both the covariate and the independent variable. If the value is less than .05 then for the covariate it means that this variable has a significant relationship to the outcome variable; for the independent variable it means that the means are significantly different across the experimental conditions after adjusting them for the covariate.

- As with ANOVA, if you have generated specific hypotheses before the experiment use planned comparisons, but if you don't have specific hypotheses use *post hoc* tests. Although SPSS will let you specify certain standard contrasts, other planned comparisons will have to be done by analysing the data using the regression procedure in SPSS.

- For parameters and *post hoc* tests, look to the columns labelled *Sig.* to discover if your comparisons are significant (they will be if the significance value is less than .05). Use bootstrapping to get robust versions of these tests.

- In addition to the assumptions in Chapter 5, test for *homogeneity of regression slopes*. This has to be done by customizing the ANCOVA model in SPSS to look at the independent variable × covariate interaction.