

For the following tests list the number of ratio scale explanatory variables, the number of nominal scale explanatory variables (factors), and the number of interaction terms.

Write a GLM with df below each term.

	Ratio	Factors	Interaction
1. Oneway ANOVA comparing hematocrit in 3 treated groups and one control group. N = 10 in each group.	<u> 0 </u>	<u> 1 </u>	<u> 0 </u>

$$df \text{ total} = (10 \times 4) - 1$$

$$39 = (4 - 1) + 36$$

2. Twoway ANOVA for BACI design (before / after at control and impacted sites, in environmental assessment). N = 4 measurements at control before impact, 4 at impacted before impact, then after impact 4 more at control and 4 more at impact site.	<u> 0 </u>	<u> 2 </u>	<u> 1 </u>
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Y = response variable

$$df \text{ total} = (4 \times 4) - 1$$

$$15 = 1 + 1 + 1 + 12$$

3. Paired comparison of reaction times in 30 subjects, before and after alcohol intake.	<u> 0 </u>	<u> 2 </u>	<u> 0 </u>
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$$df \text{ total} = (2 \times 30) - 1$$

$$59 = 1 + 29 + 29 \quad [\text{Subject} \times \text{BeforeAfter interaction term cannot be estimated}]$$

	<u> 1 </u>	<u> 0 </u>	<u> 0 </u>
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$$df \text{ total} = 30 - 1$$

$$29 = 1 + 28 \quad [\text{Regress after on before: valid. Not a "paired comparison" test}]$$

4. Carpal tunnel symptom severity with and without surgery, in 4 different hospitals (ntotal = 32)	<u> 0 </u>	<u> 2 </u>	<u> 1 </u>
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$$df \text{ total} = 32 - 1$$

$$31 = 1 + 3 + 3 + 24$$

5. Regression analysis of growth rates in 25 babies as a function of birth weight	<u> 1 </u>	<u> 0 </u>	<u> 0 </u>
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$$df \text{ total} = 25 - 1$$

$$24 = 1 + 23$$