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   ___0___   ___1____   ___0____
in 3 treated groups and one control group.
N = 10 in each group.

df total = (10*4) - 1

39 = 1 + 38

2. Twoway ANOVA for BACI design   ___0___   ___2____   ____1___
(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.

Y = response variable

df total = (4*4) - 1

15 = 1 + 1 + 1 + 12

3. Paired comparison of reaction times in   ___0___   ___2____   ____0___
30 subjects, before and after alcohol intake.

df total = (2*30) - 1

59 = 1 + 29 + 29   [Subject x BeforeAfter interaction term cannot be estimated]

    ___1___   ___0____   ____0___

df total = 30 – 1

29   = 1 + 28   [Regress after on before: valid.   Not a paired comparison test]

4. Carpal tunnel symptom severity   ___0___   ___2____   ____1___
with and without surgery,
in 4 different hospitals (ntotal = 32)

df total = 32 - 1

31 = 1 + 3 + 3 + 24

5. Regression analysis of growth rates in   ___1___   ___0____   ____0___
25 babies as a function of birth weight

df total = 25 - 1

24 = 1 + 23