

NOTES FOR EXERCISES IN SESSION 9

- * review exercise: add9:1(a),
- * add9:2; add10:2,3,1; add9:1(b) (note suggested order).

Schedule today:

- limited review of random effects models (L9–11/12),
- home assignments, current or last: questions?,
- you work on the exercises on your own, perhaps including catch-up from previous sessions (?).

Notes on the software for random effects models:

- Minitab/SAS: the General Linear Model menu/`proc glm` give:
 - * correct ANOVA table and estimates of variance components,
 - * (least squares) means but no standard errors,only for balanced or almost balanced data,
- Stata: the `anova` command gives:
 - * by specific request (see do-files), a correct ANOVA table,
 - * no variance components or (least squares) means,only for balanced data,
- Stata/R: the `mixed` command/library `nlme` give: all statistics correctly for hierarchical data structures (possibly unbalanced),
- SAS/R: `proc mixed`/library `lme4` give: all statistics correctly.

What you should be able to do after today's session...

- recognise cross-over designs and discuss carry-over effects in design and analysis.