

## Ny udskrift af R-kørsel til opg. 1 fra april 2007

##### Datasæt mm. (Tallene yderst til venstre er observationsnumrene i  
##### det oprindelige datasæt og skal IKKE bruges til noget. Der er i alt  
##### 80 observationer i datasættet.

```
> bioprotein
      rat week weight treat start
7      1   7   274     1    94
13     1  13   324     1    94
21     2   7   283     1    87
27     2  13   346     1    87
.
.
553  40   7   313     4    90
559  40  13   401     4    90
```

```
> attach(bioprotein)
> week = factor(week)
> treat = factor(treat)
> rat = factor(rat)
```

##### Fit af diverse modeller:

```
> modelA = lme(weight ~ week + treat + week:treat, random =~ 1|rat,
               method="ML")
> modelB = lme(weight ~ week + treat, random =~ 1|rat, method="ML")
> modelC = lme(weight ~ start + week + treat, random =~ 1|rat, method="ML")
> modelD = lme(weight ~ week, random =~ 1|rat, method="ML")
> modelE = lme(weight ~ treat, random =~ 1|rat, method="ML")
```

##### Diverse anova-kommandoer:

```
> anova(modelB, modelA)
      Model df      AIC      BIC    logLik    Test  L.Ratio p-value
modelB      1   7 702.9308 719.6049 -344.4654
modelA      2  10 704.3144 728.1346 -342.1572 1 vs 2 4.616404 0.2021
```

```
> anova(modelD, modelB)
      Model df      AIC      BIC    logLik    Test  L.Ratio p-value
modelD      1   4 708.3766 717.9047 -350.1883
modelB      2   7 702.9308 719.6049 -344.4654 1 vs 2 11.4458 0.0095
```

```

> anova(modelE, modelB)
      Model df      AIC      BIC    logLik    Test L.Ratio p-value
modelE      1  6 832.4438 846.7359 -410.2219
modelB      2  7 702.9308 719.6049 -344.4654 1 vs 2 131.513 <.0001

> anova(modelB, modelC)
      Model df      AIC      BIC    logLik    Test L.Ratio p-value
modelB      1  7 702.9308 719.6049 -344.4654
modelC      2  8 695.3591 714.4153 -339.6795 1 vs 2 9.571702 0.002

#### Diverse summary-kommandoer:

> summary(modelA)
Random effects:
Formula: ~1 | rat
      (Intercept) Residual
StdDev:    21.36159 9.582603

Fixed effects: weight ~ week + treat + week:treat
              Value Std.Error DF  t-value p-value
(Intercept)  299.7   7.804156 36 38.40262 0.0000
week13       62.2   4.517282 36 13.76934 0.0000
treat2       24.4  11.036743 36  2.21080 0.0335
treat3       21.1  11.036743 36  1.91180 0.0639
treat4        3.3  11.036743 36  0.29900 0.7667
week13:treat2  7.3   6.388402 36  1.14270 0.2607
week13:treat3 10.8   6.388402 36  1.69056 0.0996
week13:treat4 -0.2   6.388402 36 -0.03131 0.9752

> summary(modelB)
Random effects:
Formula: ~1 | rat
      (Intercept) Residual
StdDev:    21.22971 10.15183

Fixed effects: weight ~ week + treat
              Value Std.Error DF  t-value p-value
(Intercept) 297.4625   7.412515 39 40.12977 0.0000
week13      66.6750   2.344465 39 28.43932 0.0000
treat2      28.0500  10.350966 36  2.70989 0.0102
treat3      26.5000  10.350966 36  2.56015 0.0148
treat4       3.2000  10.350966 36  0.30915 0.7590

```

```

> summary(modelC)
Random effects:
Formula: ~1 | rat
(Intercept) Residual
StdDev:      18.54234 10.15183

Fixed effects: weight ~ start + week + treat
              Value Std.Error DF   t-value p-value
(Intercept) 163.52822  42.86540 39   3.814923  0.0005
start        1.40392   0.44389 35   3.162745  0.0032
week13       66.67500   2.36025 39  28.249094  0.0000
treat2       29.03275   9.25080 35   3.138405  0.0034
treat3       24.67490   9.26357 35   2.663649  0.0116
treat4        1.65568   9.25846 35   0.178829  0.8591

#### Diverse estimable-kommandoer:

> library(gmodels)

> forv1 = c(1,1,1,1,0,0)
> forv2 = c(1,100,0,1,0,0)
> forv3 = c(1,100,1,1,0,0)
> forv4 = c(1,100,1,0,1,0)

> forv = rbind(forv1, forv2, forv3, forv4)
> estimable(modelC, forv, conf.int=0.95)
      Estimate Std. Error   t value DF      Pr(>|t|) Lower.CI Upper.CI
forv1 260.6399  42.120062   6.188022 35  4.368715e-07 175.1316 346.1482
forv2 332.9533   7.047550  47.243837 35  0.000000e+00 318.6460 347.2606
forv3 399.6283   7.047550  56.704572 35  0.000000e+00 385.3210 413.9356
forv4 395.2704   6.802855  58.103611 35  0.000000e+00 381.4599 409.0810

```