

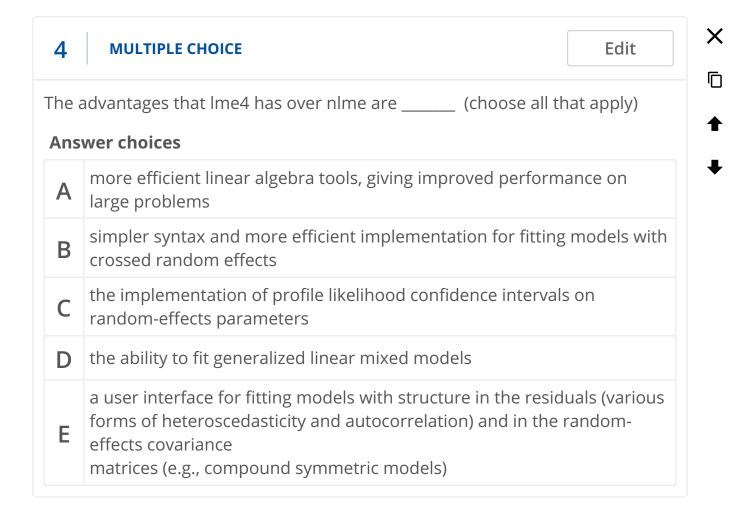
Edit Quiz Save and Exit

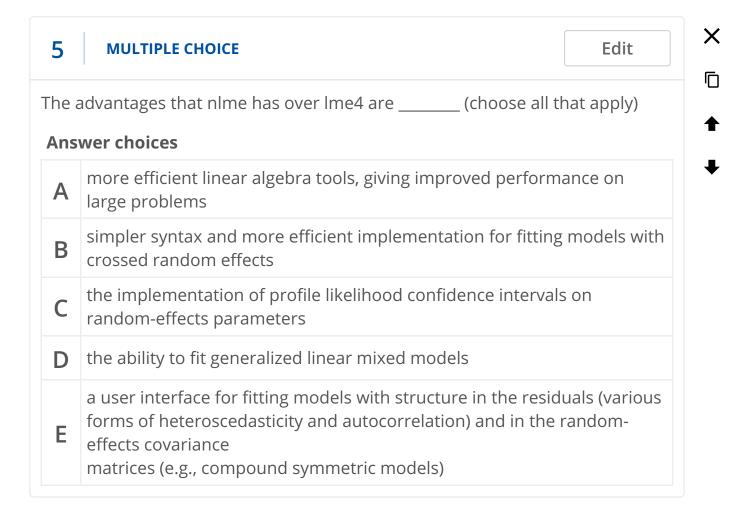
## Quiz name

Weekly quiz 7 (DUE: Sep 8 10am)

1	MULTIPLE CHOICE	Edit			
A mixed effects model is the term for a model with both fixed and effects?					
Answer choices					
Α	linear				
В	random				
C	contrast				
D	nonlinear				

2	MULTIPLE CHOICE Edit
	linear model the different types of distributions for the onse variable can be fitted using link functions.
Ans	swer choices
Α	generalised
В	mixed effects
C	random
D	classical
3	MULTIPLE CHOICE Edit
Wha	t are the two packages for fitting mixed effects models in R?
Ans	swer choices
Α	nlme
В	lme4
В	lme4 glm





### 6 MULTIPLE CHOICE

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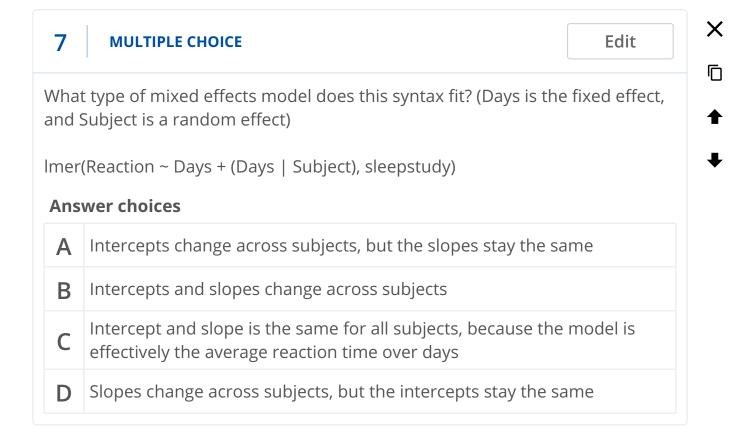
In a data set on the average reaction time per day for subjects in a sleep deprivation study (Belenky et al. 2003). On day 0 the subjects had their normal amount of sleep. Starting that night they were restricted to 3 hours of sleep per night. The response variable, Reaction, represents average reaction times in milliseconds (ms) on a series of tests given each Day to each Subject. Which of these is correct?

#### **Answer choices**

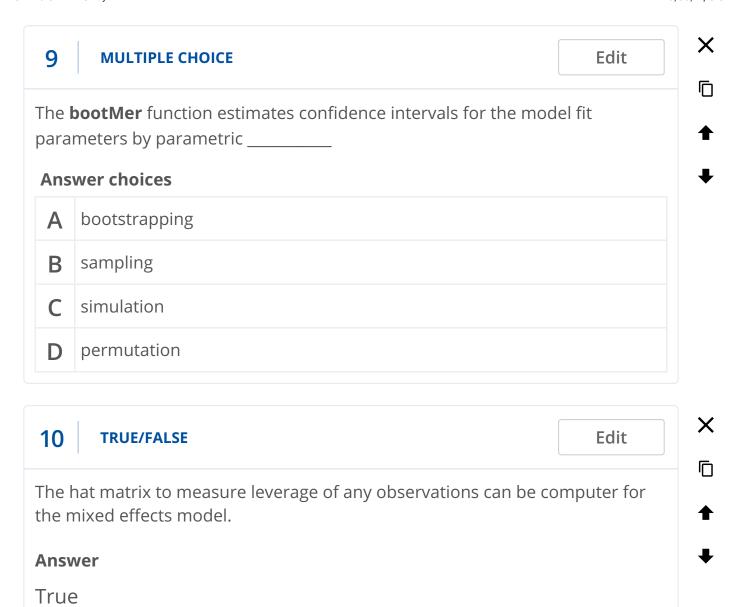
Day is a fixed effect, and Subject is a random effect. The reason is that days after the sleep deprivation is still the same if we want want to generalize the results to a broader population, but the subjects in this study are a sample of the broader population, and we would like to understand the distribution of response times over days of sleep deprivation for all the population based on the distribution of this sample of people.

- B Day is a random effect, and Subject is a fixed effect. The reason is that days after the sleep deprivation is are always changing and we might want to generalize the results to a different set of days, and the subjects in this study are the only people that we want to know about.
- Day is a fixed effect, and Subject is a fixed effect. The reason is that days after the sleep deprivation is still the same if we want want to generalize the results to a broader population, and the subjects in this study are the only people that we want to know about.

Day is a random effect, and Subject is a random effect. The reason is that days after the sleep deprivation is are always changing and we might want to generalize the results to a different set of days, and the subjects in this study are a sample of the broader population, and we would like to understand the distribution of response times over days of sleep deprivation for all the population based on the distribution of this sample of people.



8	MULTIPLE CHOICE	Edit	×		
Each	term is of the form (expr   factor).		, i		
Answer choices					
Α	linear effects		•		
В	normal effects				
C	fixed effects				
D	random effects				



## 11 MULTIPLE CHOICE

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**1** 

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In the Imer model fit output, this is the summary of the fixed effects:

Fixed effects:

Estimate Std. Error t value

(Intercept) 251.405 6.825 36.84

Days 10.467 1.546 6.77

What would the equation of the resulting linear model?

#### **Answer choices**

$$\hat{y} = 36.84 + 6.77 \ Days$$

$$\hat{y} = 6.825 + 1.546 \ Days$$

$$\hat{y} = 251.405 + 10.467 \, Days$$

**D** None of these

# 12 MULTIPLE CHOICE

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In the lmer model fit output, this is the summary of the random effects:

Random effects:

Groups Name Variance Std.Dev. Corr

Subject (Intercept) 612.09 24.740

Days 35.07 5.922 0.07

Residual 654.94 25.592

Number of obs: 180, groups: Subject, 18

The distribution of the intercepts across subjects has mean equal to 251.405, and variance equal to \_\_\_\_?

#### **Answer choices**

Α	612.09
В	24.740
C	35.07
D	5.922

## 13 TRUE/FALSE

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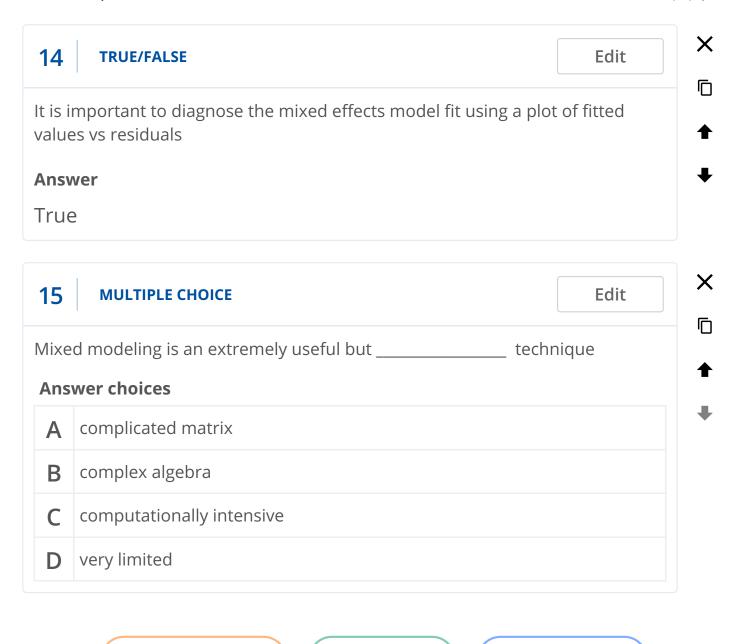
The REML criterion at convergence is a summary of how well the model fits, similar to the deviance.

1

X

**Answer** 

True



+ True/False

+ Short Answer

+ Multiple Choice