Module 4 R Quiz

Due Apr 25 at 11:59pm   **Points** 4   **Questions** 4   **Time Limit** 30 Minutes
Allowed Attempts 2

Instructions

Instructions: All questions in this quiz are about R. You will have 30 minutes, and each question is worth 1 point. You may find it helpful to have R open while taking this quiz.

[Take the Quiz Again]

Attempt History

	Attempt	**Time**	**Score**
LATEST	[Attempt 1](#)	20 minutes	3.5 out of 4

⚠ Correct answers are hidden.

Score for this attempt: **3.5** out of 4
Submitted Apr 25 at 3:16pm
This attempt took 20 minutes.

> All questions rely on the data in **ex2119** in the **Sleuth3** library. The
> dataset contains information from ten different studies in which
> investigators examined the relationship between breast feeding and
> breast cancer in women.

Question 1	**1 / 1 pts**

Take a look at the data first. Which of the following things can you verify
(check all that apply)?

▶

☐ All studies were conducted in the same way.

☑

Study 5 had substantially more participants than all of the other studies.

☐

From these data we will be able to make a causal link between whether or not a woman breast feed and whether or not she got breast cancer.

☑

Some studies had roughly equal numbers of women with and without cancer.

Question 2

1 / 1 pts

Remembering that `Study` should be coded as a factor variable, fit a binomial logistic regression model to these data that includes `Lactate`, `Study` and their interaction. Are there any problems with this model (check all that apply)?

☐ Yes, it's unlikely that the fitting algorithm only needed 2 iterations to work.

☐ Yes, there is over dispersion.

☐ No, all of the effects are estimated.

☑

Yes, the model is overfit—there are no df left to estimate the residual deviance.

Question 3

1 / 1 pts

▶

Now fit a model that just includes the main effects of `Lactate` and `Study`.
Which of the following do you observe (check all that apply)?

☑

Because there's evidence of over dispersion, we shouldn't make any
inferences using this output.

☐

There is convincing evidence that lactation is associated with breast
cancer.

☑ There is evidence of over dispersion.

☐ There appears to be something different about Study 7.

Partial   **Question 4**   0.5 / 1 pts

Fit the same model you fit in question 3, except use `family = quasibinomial`. Which of the following do you observe (check all that apply)?

☑ The effect of Lactate is different across the different studies.

☑ There is something different about Study 5.

☑ There is no evidence of a difference between Studies 1 and 7.

☐

Because we included study in the model, there is no explanation for the
over dispersion.

▶

Quiz Score: **3.5** out of 4