

1. What is clustered data?

- ☐ Clustered data is when there are observations that are the exact same in a dataset.
- ☐ Data is considered clustered when our dataset features have a low variance.
- ☐ Clustered data is when one group in a dataset is over-represented.
- ☒ Data is considered clustered when observations are correlated within groups, sometimes related to study designs.

 **Correct**

2. Which of the following features has the highest correlation between two observations in the same cluster?

- ☐ BPXSY1
- ☒ SDMVSTRA
- ☐ RIDAGEYR
- ☐ BMXBMI
- ☐ smq

 **Correct**

3. What is true about multiple linear regression and marginal linear models when dependence is present in data?

- ☐ The standard error in multiple linear regression and marginal linear models tends to be the same.
- ☐ A multiple linear regression model is theoretically justified when there is dependence in the data.
- ☒ Marginal linear model estimates and standard errors are meaningful due to the dependence of data, but only when dependence is strictly between observations within the same group.
- ☐ The standard error in multiple linear regression tends to be higher than in marginal linear models.

 **Correct**

4. Multilevel models are expressed in terms of _____.

- ☐ Mixed effects
- ☐ Correlation coefficients
- ☒ Random effects
- ☐ Fixed effects

 **Correct**

5. Which of the following is NOT true regarding reasons why we fit marginal models?

- ☐ Quicker computational times; faster estimation
- ☐ Robust standard errors that reflect the specified correlation structure
- ☐ Easier accommodation of non-normal outcomes
- ☒ All the above are true

 **Correct**