✓ **Congratulations! You passed!**
TO PASS 80% or higher

Keep Learning

GRADE
100%

Name That Model

LATEST SUBMISSION GRADE

100%

1. You are interested in predicting the probability that an NCAA men's basketball team wins their first round game in the annual NCAA men's basketball tournament, where potential predictors of the binary indicator of winning the first game include a variety of team-level variables measured for each of the 64 teams competing in the first round. There is only one observation per team, and the dependent variable is a binary indicator (1, 0) of whether the team won their first round game.

   1 / 1 point

   What type of model would you fit?

   ○ Linear regression model

   ⦿ Logistic regression model

   ○ Multilevel linear regression model with random team effects

   ○ Multilevel logistic regression model with random team effects

   ○ Marginal linear model, fitted using GEE

   ○ Marginal logistic model, fitted using GEE

   ✓ Correct

2. You are interested in estimating the relationship between gender (the IV) and a binary indicator of ever having experienced a major depressive disorder (the DV), where both variables were collected from a large national sample that involved area cluster sampling. You also wish to estimate between-cluster variance in the probability of having experienced a major depressive disorder, and explain this variance with the fixed effects of cluster-level covariates.

   1 / 1 point

   What type of model would you fit?

   ○ Linear regression model

   ○ Logistic regression model

   ○ Multilevel linear regression model with random cluster effects

   ⦿ Multilevel logistic regression model with random cluster effects

   ○ Marginal linear model, fitted using GEE

   ○ Marginal logistic model, fitted using GEE

   ✓ Correct

3. You want to fit a model that enables the prediction of a continuous measure of birth weight for all of the newborns at a single large hospital. The data arise from a simple random sample of 500 births, and the predictors including information collected from both the mother and the father.

   1 / 1 point

   What type of model would you fit?

   ⦿ Linear regression model

   ○ Logistic regression model

   ○ Multilevel linear regression model with random hospital effects

   ○ Multilevel logistic regression model with random hospital effects

   ○ Marginal linear model, fitted using GEE

   ○ Marginal logistic model, fitted using GEE

   ✓ Correct

4. After publishing a research paper describing the results from the model fitted for Question #3, you are contacted by 20 other large hospitals, and they wish to contribute to the estimation of a model for predicting birth weight. The team agrees that estimation of the variance in expected birth weight between hospitals and explanation of that variance with hospital-level covariates is a key objective. What type of model would you fit?

   1 / 1 point

   ○ Linear regression model

   ○ Logistic regression model

○ Multilevel linear regression model with random hospital effects

⦿ Multilevel linear regression model with random hospital effects

○ Multilevel logistic regression model with random hospital effects

○ Marginal linear model, fitted using GEE

○ Marginal logistic model, fitted using GEE

✓ **Correct**

5. You wish to fit a model to a "forced choice" binary dependent variable measuring political party preference (if you had to pick a political party, which would you select: Democratic or Republican?), and examine the relationship of parental political attitudes with the preference of the respondents. Based on the study design, there are multiple respondents measured from each of several neighborhoods, and respondents within the same neighborhood may have shared political views, but you aren't interested in explicitly estimating between-neighborhood variance. You only wish to estimate the overall relationship of interest in the larger population, and account for possible within-neighborhood correlation in the DV.

1 / 1 point

What type of model would you fit?

○ Linear regression model

○ Logistic regression model

○ Multilevel linear regression model with random neighborhood effects

○ Multilevel logistic regression model with random neighborhood effects

○ Marginal linear model, fitted using GEE

⦿ Marginal logistic model, fitted using GEE

✓ **Correct**