

#### Exercise 1

The number of schools is 898.

The number of students is 160935.(After omitting students without scores and rank place.)

The number of programs is 32.

There are 117503 students applied for at least one senior high schools in the same district to home.

#### Exercise 2-4

The required datasets are presented in the R code.

#### Exercise 5

We need to use the multi-logit model given that the test score for each student is different.

#### Exercise 6

We need to use the conditional logit model given that the quality is identical for each student.

#### Exercise 7

(a) I would say the conditional logit model is better than the first one. The test scores differ from each individual while quality is the same.

When rule out the "Others" program choice, we are reducing the choices.