

Homework #5

Due November 22

1. Estimate the relative frequency of vowels a,e,i,o,u on page 4 of Thompson's book (2nd ed) using two designs. Assume that there are 498 words on the page. The cluster design defines primary units as words and secondary units as letters. Let

$$y_{ij} = \begin{cases} 1 & \text{if letter } j \text{ in word } i \text{ is a vowel} \\ 0 & \text{if letter } j \text{ in word } i \text{ is not a vowel} \end{cases}$$

Sample $n = 25$ primary units.

The second design is systematic and the secondary units are words. Sample 25 secondary units. The variable of interest is the relative frequency of vowels in a word.

Notice that the secondary unit definitions are different in the two designs.

2. Problem 5, p. 140 of the textbook.