MATHEMATICS 300 — SPRING 1997

Introduction to Mathematical Reasoning

Instructor: H. J. Sussmann

HANDOUT NO. 3. February 4, 1997

The **FIRST MIDTERM EXAM** will be on **Thursday, February 27.**

READING ASSIGNMENTS SO FAR

- For the week of January 28 and 30, you have to read *all of Chapter 1.* Plus, of course, the first handout.
- For the week of February 4 and 6, you have to read *Sections 1, 2 and 3 of Chapter 2.*
- For the week of February 11 and 13, you have to read *Sections 2.4, 3.1 and 3.2.*

HOMEWORK ASSIGNMENTS SO FAR

(1) *Due Tuesday, January 28.* Page 14, Problem 4; Page 15, Problem 7; Page 26, Problem 10; Page 27, Problem 11; Page 37, Problems 2 and 8.

Note: the first homework assignment was returned on Thursday, January 30, to all the students who handed it in on January 28. **It was not graded.** This was done because most students seem to have misunderstood (or misread, or failed to read, or failed to take seriously) the guidelines given in the first handout. Also, most students got Problem 8 in Page 37 wrong, because they failed to read the statement carefully. So *everybody is given a second chance.* You can all hand in Assignment No. 1 on February 4, together with Assignment 2.

(2) *Due Tuesday, February 4.* Page 14, Problem 5; Page 47, Problems 1 (parts (a), (j), (q)), 2, and 3; Page 48, Problems 5 (parts (a), (c)) and 7; Page 49, Problems 11 and 12.

(3) *Due Tuesday, February 11.* Page 56, Problem 1, parts (a), (b), (f), (g), (h), (j), (l). Problem 4, parts (a), (b), (c), (e), (h), (i), (j). Page 60-61, Problem 2. Page 61, Problems 3,4. And, in addition, the following:

(A) Let S be the set of all words consisting of exactly three vowels and three consonants, with repetition allowed for the vowels but not for the consonants. (For example: *arabap*, *benito*, *yaaexz* and *xaeiyz* belong to S, but *bavenii*, *baeiou*, *babeic* and *gugugu* do not. Recall that in the English alphabet there are 5 vowels and 21 consonants.)

(i) Determine how many members S has.

(ii) Determine what percentage of the words in S contain the letter "a". Is it higher or lower than 50%?