640:251:19-20 **9/5/96**

Here's some advice I distributed last year about writing up workshop problems. Please note that out of the hundreds of solutions I read last year, I only rarely found writeups which were too elaborate. I want to easily read what you write. You should be able to write about "technical" ideas clearly and carefully.

Writing Up Workshop Problems

You will receive two grades for each workshop problem you turn in. One grade (0,1,2) will assess the correctness of the mathematical content. The other grade (0,1,2) will assess the way in which the math is presented. Your grade for the problem will be the sum of these two grades. Since you may never have had to worry about how you present your ideas in math, here are some guidelines for you.

The examples in the book will give you an idea of what we're looking for. The author begins by writing a statement of the problem. He uses complete English sentences. He explains those steps which are not obvious to a Calc 1 student (and he doesn't explain the steps that are obvious). If there's a graph, he labels it, and he discusses what can be deduced from the graph in the text of the example. At the end of the example, he states his conclusion.

Now we'll warn you about two common mistakes that students make. First, students have difficulty making their write-up a coherent, self-contained document. We shouldn't have to look back at the workshop sheet to read the write-ups. The work should be organized so that we can see what steps you are taking and why. On the other hand, you don't have to comment on every step; if you are solving an equation for a variable, say so – don't put a comment for each algebraic step.

The second common mistake is incorrect use of mathematical expressions or notation. Some characters and expressions have special meanings in mathematics. (The most common one to cause problems is "=".) You should use such notation correctly in your write-ups: for example, use "=" between expressions that you mean are all *equal*, but *not* between ones that aren't equal. In general, you should be able to read the mathematical notation as if it were a sentence (or a paragraph) and have it make sense.

We anticipate that the scores for presentation will probably be rather low at the start of the semester. That isn't really a problem: writing solutions with explanations is probably not something you have done in a math class before. With the positive feedback we hope to give you and with your effort, improvement will be rapid. Because mathematics is used to solve problems *and to explain the solutions to others*, writing clear solutions will be a good habit to develop. At the very least, trying to turn in a perfect write-up forces you to think a bit more carefully about how you did the problem and therefore helps you learn calculus.