22**C** : 131 **Limits of Computation**
Spring 2005
Homework 1
Due on February 17

Please refer the firstday handout for what is acceptable behaviour in solving homeworks.

1. [20 points] Give the formal (complete) description of a Turing that accepts the language $C = \{a^i b^j c^k \mid i \times j = k \text{ and } i, j, k \geq 1\}$. Recall that we discussed this language in class. This is also the language discussed in example 3.6 of the textbook. You are welcome to use a mutli-tape Turing machine if that is more convenient. The state diagram will probably be quite huge, so please add an explanation that will help the reader navigate it.

2. [20 points] Problem 4.17

3. [20 points] Problem 5.10