Spring Semester, 2005
Problem #2
Due Date: Friday, February 25

Consider the Frequency Count (FC) scheme for self-adjusting linked lists. A count \( f_i \) is stored for each key \( x_i \). Initially, the count is 0. After a key \( x_i \) is requested, and its count \( f_i \) is incremented, it is moved a head the minimum distance needed so that the list remains sorted in non-increasing order of the frequency count \( f_i \). You may assume that the list is initially empty and the first time a key \( x_i \) is requested, it is inserted at the end of the list.

Prove that \( \text{cost}(\text{FC}) \leq 2 \text{cost}(\text{StaticOpt}) \).