Exercise #6 (No computers needed)
Due Friday, 6 Nov, at 11:59pm

(3 pts) Complexity:
1. What is the big - O notation for:
   a.) A method that takes exactly $2n^2 + 5n + 100$ steps
   b.) for(i = n; i > 0; i = i/2) {
       //constant time operations
       ...
    }
   c.) binary search
   d.) for(i = n; i > 0; i-- ) {
       for(j = m; j > 0; j--) {
       // m does not vary as n, i.e. it's independent
       //constant time operations
       ...
    }
   e.) for(i = n; i > 0; i-- ) {
       for(j = n; j > 0; j--) {
       //constant time operations
       ...
    }
   f.) linear search
   g.) To find your best friend SoulMatesRUss.com simply tests everyone against every other Buddy Seeker to find the best matches.

(3 pts) Linked Lists:
Create a doubly linked list. Create an algorithm for each of:
   a.) Insert at a specified location
   b.) Delete a specified node
   c.) Delete the last node

(4 pts) Sorting:
You just finished collecting and putting in order the 200 applicants for a new job. The mail intern comes by and drops off 50 more applications that “have to be included”.
   a. Describe an algorithm to sort them first and then how you would put them in the larger stack.
   b. Describe an algorithm to bite the bullet and just put them in one at a time.
   c. Estimate the complexity of each. Is one better? Does it matter for only 250 items?