2. The class URL does not define a != operator. Multiset<URL>::insert calls the find function, which requires the parameter class to define a != operator to function properly.

3b. Recursive calls to the one-parameter overload of listAll with the given constraints would not allow this problem to be solved because there is no way to pass information about parent menus to deeper calls of listAll which would handle the submenus.

4a. O(N^3). In the worst case, N \* (N-1) \* (N-2) has a highest order term of N^3.

4b. O(N^3), because in the worst case, the highest order term of N \* N/2 \* (N-2) is still N^3.

5a. O(N^2). The loop will create N instances of x. Calling m1.get will take N visits to the ItemTypes, as each ItemType object is only accessed once during the linked list transversal. Calls to m2.contains will require on average N \* N/2 visits of the ItemType objects of the m2 Multiset. Swapping res and result will not require any ItemType visits, but the destruction of the res Multiset at the end of the function will result in another N visits. The highest order term is N^2, so the order of this function is N^2.

5b. O(N log N). Copying items into v will require 2N visits of ItemType objects as well as 2N copies. Sorting is N log N, and the for loop requires 2N ItemType comparisons plus some X ItemType copies, while the destruction will require N – X ItemType destructions. X + N – X is N. The destruction of the v vector requires 2N destructions of ItemType. The highest order term is N log N.