CSE220 Practice Sheet 3

1. Given a singly linked list, do the following operations stepwise:

The **head** refers to the start of the linked list.

   a. **Remove** 56.
   b. **Insert** last three digits of your BRACU student id%23 at position 4.
   c. **Insert** birthyear%61 at position 3.
   d. **Right rotate** the list 3 times.
   e. **Remove** 92.
   f. **Remove** 66.
   g. **Left rotate** the list by 4 times.
   h. **Reverse** the list (**in-place – draw all the steps**).

2. Given a singly linked list and a number (k), your task is to reverse the list each k nodes.

Sample Input	Sample Output
1->2->3->4->5->6->7->8 and 4	4->3->2->1->8->7->6->5
1->2->3->4->5 and 3	3->2->1->5->4

3. Given a singly linked list of integers, rearrange the elements of the list in such a way that the odd numbers will be placed at the end of the list in reverse order.

Sample Input	Sample Output
1->2->3->4->5->6->7->8	2->4->6->8->7->5->3->1
1->2->3->4->5	2->4->5->3->1

4. Given two singly linked lists of integers, returns a new list containing the intersection of these two linked lists.

Sample Input	Sample Output
First List: 1->2->3->4->5 Second List: 2->4->6->8->7	2->4
First List: 50->20->30->40->15 Second List: 12->40->50->30->7	50->30->40