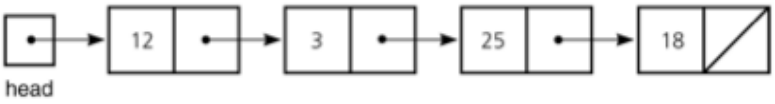
CSCI 2170 Quiz 4 (25 pts) **Name _____**

1. Consider the **unsorted linked list** of integers as shown in the figure below.



a. Suppose pointer variable ***prev*** points to the second node in the list and ***cur*** points the third node, write C++ statements that delete **the third node (the one with value 25)** and release the memory space to the heap.

b. After the node with value 25 is deleted, assume that ***cur*** points to the first node of the remaining three nodes, write C++ statements that delete the first node (the node with value 12) and release the memory to the heap.

c. After the two nodes are deleted from problems (a) and (b), write C++ statements that insert a new node that contains a value 5 into the list so that it is in between the remaining two nodes.

<More questions on the back page>

2. The following code was written to print all the data in the linked list that has a value greater than 5. But the program ran into "segmentation fault" run time error. What is the problem with the code? Show how you would fix the code.

```
NodePtr cur;
cur=head;
while (cur→data>5 && cur!=NULL) {
        cout << cur→data << endl;
        cur = cur→ next;
}
```

3. Show C++ code in the main function that reads 10 values from the user and insert each value into a linked list of integers. The head of the linked list is NULL at the beginning. You may choose to insert the values always at the front of the list, or always at the end of the list.

```
struct NodeType;
typedef NodeType * NodePtr;

struct NodeType
{
        int   data;
        NodePtr next;
}
NodePtr   head=NULL;
```