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1. In a doubly linked list of size n, you are given the address of the last node. What will be the time required to access the data stored in the second last node?

A. O(log log n)
B. [Correct Answer] [Your Answer] O(1)
C. O(log n)
D. It cannot be accessed
E. O(n)

2. Which of the following List ADT implementations gives us an O(1) time for `removeAtEnd`, i,e removing an element from the end of the list?

I. A singly-linked list with only a `head` pointer.
II. A singly-linked list with `head` and `tail` pointers.
III. A doubly-linked list with only a `head` pointer.
IV. A doubly-linked list with `head` and `tail` pointers.

A. [Your Answer] II and IV
B. I, II, III and IV
C. I and III
D. I, III and IV
E. [Correct Answer] None of the other options is correct

3. Consider a class `List` that is implemented using a doubly linked list with only a `head` pointer (i.e. pointer to the first node in the list).

Given that implementation, which of the following operations *cannot* be implemented in O(1) time?

I. Insert item at the front of the list
II. Insert item at the rear of the list
III. Delete front item from list
IV. Delete rear item from list

A. I and III
B. [Your Answer] I, II and III
C. I and II
D. [Correct Answer] II and IV
E. All of them

4. In a singly linked list containing n nodes, the time required to find the maximum element is:

A. [Correct Answer] [Your Answer] O(n).
B. O(log n).
C. O(n^2).
D. O(1).
E. O(n log n).

5. Consider the following function definition and suppose that 1) the `node` class consists of an integer `data` element, and a `node` pointer called `next`, and 2) variable `head` is the address of a linked list of such `node`s.

What does the function do?

```
void fun(node * curr) {
   if (curr != NULL) {
      fun(curr->next);
      cout << curr->data;
   }
}

node * head = NULL;
// maybe insert data into the chain here
fun(head);
```

A. `fun` segfaults on lists of odd length.
B. [Correct Answer] `fun` prints the reverse of the list.
C. None of the other options is correct.
D. `fun` prints every other element of the list.
E. [Your Answer] `fun` prints the elements of the list from `head` to the end.