

CSE 143 Su01 Quiz 4 – August 9, 2001

NAME: _____

1(a). One of the data structures used frequently in programming is a Queue (implemented here with a linked list). Given the following data structure for a queue of integers, implement the `int remove()` method in the space below.

```
struct Node {
    int data;
    Node *next;
};

class Queue {
public:
    Queue();
    int remove();
    void insert(int item);
    ~Queue();
private:
    Node *front;
    Node *rear;
};

int Queue::remove() {
```

1(b). What is the running time, in bigOh notation (e.g. $O(n)$, $O(1)$, $O(n^2)$, etc.) of this function?

2. A Queue could also be implemented with an array instead of with a linked list. Give one advantage or one disadvantage of implementing a Queue with an array rather than using a linked list.