

**COMP 587**  
**Spring 2020**

**Writing Unit Tests**

Consider the following method. Write tests that cover all behaviors of the method. The first has been written for you.

```
public int foo(final int input) {
    if (input < 0) {
        return -1;
    } else if (input == 0) {
        return 0;
    } else {
        assert(input > 0);
        return 1;
    }
}

@Test
public void testLessThan() {
    assertEquals(-1, foo(-20));
}
```

Consider the code on the next page. Write tests that cover all behaviors of the `getElementAt` method.

```

public class LinkedList {
    private class Node {
        int head;
        Node tail;

        public Node(final int head, final Node tail) {
            this.head = head;
            this.tail = tail;
        }
    }

    private Node root;

    public LinkedList() {
        root = null;
    }

    public void addFront(final int element) {
        root = new Node(element, root);
    }

    public int getElementAt(final int index)
        throws NoSuchElementException {
        int curPos = 0;
        Node current = root;

        while (curPos < index && current != null) {
            current = current.tail;
            curPos++;
        }

        if (current == null) {
            throw new NoSuchElementException();
        } else {
            assert(curPos == index);
            return current.head;
        }
    }
}

```