The grader for this homework will be Rahul Mangwani. His email address is manghwani7@gmail.com. Note: Students who achieved a grade of 85 or better on the midterm are excused from this assignment.

The following are typical of wrong solutions that were submitted for the midterm exam. (I did not actually copy them off exams in making up this problem set.) For each wrong solution, explain carefully what mistakes have been made, and for the wrong answers to problems 3 and 4, what the programs will actually do and why. I suggest that, with these, you first think through what you expect the program to do, and then compile them and, if they compile, run them with a driver, to see what they actually do. These are answers to version A of the midterm exam, which is on the NYU Classes site.

Problem 1: First wrong answer

5, 14, 5, 14.

Problem 1: Second wrong answer

18, 5, 5, 5.

Problem 3: First wrong answer

```java
public MyList selectLarger(int x) {
    if (next == null)
        if (value > x) return this;
        else return null;
    else if (value > x) {
        next = next.selectLarger(x);
        return this;
    } else return next.selectLarger(x);
}
```

Problem 3: Second wrong answer

```java
public MyList selectLarger(int x) {
    if (x < 0) return null;
    n = new MyList();
    n.value = value;
    if (next != null)
        n.next = selectLarger(x-1);
    return n;
}
```
Problem 3: Third wrong answer

Note: This is not recursive, but why is it wrong even as an iterative solution?

```java
public MyList selectLarger(int x) {
    MyList n = new MyList();
    l = this;
    while (l != null) {
        if (l.value > x)
            n.value = l.value;
        l = l.next;
        n = n.next;
    }
}
```

Problem 4.A: First wrong answer

```java
public static void main(String[] args) {
    Person fred = new Person("Fred");
    Person gina = new Person("Gina");
    Person harry = new Person("Harry");
    fred.next = harry;
    harry.prev = fred;
    gina.friends = fred;
    fred.friends = gina;
    harry.friends = gina;
}
```

Problem 4.A: Second wrong answer

```java
public static void main(String[] args) {
    Person fred = new Person("Fred");
    Person gina = new Person("Gina");
    Person harry = new Person("Harry");
    GList f = new Glist(fred);
    GList g = new Glist(gina);
    GList h = new Glist(harry);
    f.next = h;
    h.prev = f;
}
```