Computer Science 2711  
Fall 2004  
Lab Quiz #5

NAME: ___________________________       STUDENT ID #: ____________

a) (10 marks) Consider the following diagram of an IntNode-based linked list:

```
head

4 ----> 7 ----> 5 ----> 2 ----> 9
```

Execute the following Java code-fragment as it operates on this linked list, and draw a diagram of the resulting linked list (with the positions of references a and b) each time statement DISPLAY is reached.

```java
IntNode cursor, a, b, temp, head;
int i;

a = head; b = head.getLink(); i = 1;

DISPLAY

while (b.getLink().getLink() != null) {
    if ((i % 2) == 1) {
        temp = a; a = b; b = temp;
    } else {
        temp = b; b = a.getLink();
        a = temp.getLink();
    }
    b.setData(a.getLink().getData());

    DISPLAY

    i++;
}
```
b) (10 marks) Consider the following diagram of an \texttt{IntNode}-based linked list:

```
head
  2 1 2 3 1
```

Execute the following \texttt{Java} code-fragment as it operates on this linked list, and draw a diagram of the resulting linked list (with the position of reference a) each time statement \texttt{DISPLAY} is reached.

```java
IntNode cursor, a, b, temp, head;
int i, val;

a = head; i = 1;

DISPLAY

while (a.getLink() != null) {
    if ((i % 2) == 1)
        temp = a.getLink();
    else
        temp = a;
    val = 0;
    while (temp != null) {
        val += temp.getData();
        temp = temp.getLink();
    }
    a.getLink().setData(val);
    a = a.getLink();

    DISPLAY

    i++;
}
```