Computer Science 2711
Fall 2004
Lab Quiz #4

NAME: ___________________________ STUDENT ID #: _____________

In this quiz, we will use and extend the class IntNode described in the textbook and lectures.

a) (12 marks) Consider the following diagram of an IntNode-based linked list starting at IntNode-reference head:

```
head
  ── 5 ── 7 ── 2 ── 4 ── 9 ──
```

Give the output of the following Java code-fragment as it operates on this linked list, and draw a diagram of the resulting linked list starting at head following the execution of this code-fragment.

```java
IntNode cursor, cursor1, cursor2, head;
int val, turn;

cursor1 = cursor2 = head;
turn = 2;
while (cursor2.getLink().getLink() != null) {
    cursor2 = cursor1.getLink();
    val = cursor1.getData();
    while (cursor2.getLink() != null) {
        val += cursor2.getData();
        cursor2 = cursor2.getLink();
    }
    if ((turn %2) == 0)
        val = -val;
    System.out.println("(T,V) = (" + turn + "," + val + ")");
    cursor2 = new IntNode(val, cursor1.getLink().getLink());
    cursor1.setLink(cursor2);
    cursor2 = cursor1;
    cursor1 = cursor1.getLink();
    turn++;
}
```
b) (8 marks) Write a two-parameter Java method `stutter` which, given the starting `IntNode`-reference `head` of a linked list and an integer value `target`, counts the number of times `numOcc` that this target-value occurs in the list and adds `numOcc` nodes with value `target` to the end of that list. Note that this method does not return any value, *i.e.*, it has return-type `void`. 