Đã bắt đầu vào lúc	Thứ ba, 26 Tháng chín 2023, 11:09 AM
Tình trạng	Đã hoàn thành
Hoàn thành vào lúc	Thứ năm, 5 Tháng mười 2023, 2:57 PM
Thời gian thực hiện	9 ngày 3 giờ
Điểm	8,65/9,00
Điểm	9,61 của 10,00 (96,11 %)

Câu hỏi 1

Chính xác

Điểm 0,75 của 1,00

Class LLNode is used to store a node in a singly linked list, described on the following:

```
class LLNode {
   public:
      int val;
      LLNode* next;
      LLNode();
      LLNode(int val, LLNode* next);
}
```

Where val is the value of node, next is the pointer to the next node.

Request: Implement function:

```
LLNode* addLinkedList(LLNode* 10, LLNode* 11);
```

Where 10, 11 are two linked lists represented positive integers, each node is a digit, the head is the least significant digit (the value of each node is between 0 and 9, the length of each linked list is between 0 and 100000). This function returns the linked list representing the sum of the two integers.

Example:

Given 10 = [2, 3] (representing 32) and 11 = [1, 8] (representing 81). The result would be 10 = [3, 1, 1] (representing 32 + 81 = 113).

Note:

In this exercise, the libraries iostream, string, cstring, climits, utility, vector, list, stack, queue, map, unordered_map, set, unordered_set, functional, algorithm has been included and namespace std are used. You can write helper functions and classes. Importing other libraries is allowed, but not encouraged, and may result in unexpected errors.

```
Test

int arr1[] = {2, 9};
int arr2[] = {0, 5};
LLNode* head1 = LLNode::createWithIterators(arr1, arr1 + sizeof(arr1) / sizeof(int));
LLNode* head2 = LLNode::createWithIterators(arr2, arr2 + sizeof(arr2) / sizeof(int));
LLNode* newhead = addLinkedList(head1, head2);
LLNode::printList(newhead);
head1->clear();
head2->clear();
newhead->clear();
```

Answer: (penalty regime: 0, 0, 0, 5, 10, ... %)

```
1 ▼ LLNode* addLinkedList(LLNode* 10, LLNode* 11) {
        LLNode* dummyHead = new LLNode();
 2
        LLNode* current = dummyHead;
 3
        int carry = 0;
 4
 5
        while (10 || 11) {
 6 ▼
 7
            int sum = carry;
 8 •
            if (10) {
                 sum += 10->val;
 9
                 10 = 10 - \text{next};
10
11
            if (11) {
12 ▼
                 sum += 11->val;
13
                 11 = 11->next;
14
15
16
17
             carry = sum / 10;
            current->next = new LLNode(sum % 10, nullptr);
18
            current = current->next;
19
20
21
        if (carry > 0) {
22 ▼
```

	Test	Expected	Got	
*	<pre>int arr1[] = {2, 9}; int arr2[] = {0, 5}; LLNode* head1 = LLNode::createWithIterators(arr1, arr1 + sizeof(arr1) / sizeof(int)); LLNode* head2 = LLNode::createWithIterators(arr2, arr2 + sizeof(arr2) / sizeof(int)); LLNode* newhead = addLinkedList(head1, head2); LLNode::printList(newhead); head1->clear(); head2->clear(); newhead->clear();</pre>	[2, 4, 1]	[2, 4, 1]	*

Chính xác

Điểm cho bài nộp này: 1,00/1,00. Tính toán cho lần làm bài trước đó, điểm **0,75/1,00**.



Điểm 1,00 của 1,00

Polynomials is an important application of arrays and linked lists. A polynomial is composed of different terms where each of them holds a coefficient and an exponent. A polynomial p(x) is the expression in variable x which is in the form $(a_nx^n + a_{n-1}x^{n-1} + + a_1x + a_0)$, where a_n , a_{n-1} ,, a_0 fall in the category of real numbers and 'n' is the non-negative integer, which is called the degree of polynomial.

Example: $10x^2 + 26x$, here 10 and 26 are coefficients and 2, 1 is its exponential value.

Points to keep in Mind while working with Polynomials:

- The sign of each coefficient and exponent is stored within the coefficient and the exponent itself.
- The storage allocation for each term in the polynomial must be done in descending order of their exponent.

In this question, complete SLinkedList class is included. You should use this class to complete your Polynomial class with initialized frame as following. This task is implement insertTerm to insert a term into a polynomial.

```
class Polynomial;
class Term {
private:
    double coeff;
    int exp;
    friend class Polynomial;
public:
   Term(double coeff = 0.0, int exp = 0) {
       this->coeff = coeff;
        this->exp = exp;
    bool operator==(const Term& rhs) const {
        return this->coeff == rhs.coeff && this->exp == rhs.exp;
   friend ostream & operator<<(ostream &os, const Term& term) {</pre>
        cout << endl;</pre>
        cout << "Term: " << "(" << term.coeff << " " << term.exp << ")";</pre>
        return os;
class Polynomial {
private:
    SLinkedList<Term>* terms;
public:
    Polynomial() {
        this->terms = new SLinkedList<Term>();
    ~Polynomial() {
        this->terms->clear();
    void insertTerm(const Term& term);
   void insertTerm(double coeff, int exp);
    void print() {
       SLinkedList<Term>::Iterator it;
        cout << "[";
       for (it = this->terms->begin(); it != this->terms->end(); it++) {
            cout << (*it);
```

```
cout << endl << "]";
};</pre>
```

Test	Result
<pre>Polynomial *poly = new Polynomial(); poly->insertTerm(6.0, 2); poly->insertTerm(4.0, 5); poly->insertTerm(4.0, 3); poly->insertTerm(6.0, 5);</pre>	[Term: (10 5) Term: (4 3) Term: (6 2) Term: (-1 0)
<pre>poly >insertTerm(-1.0, 0); poly->insertTerm(-6.0, 6); poly->insertTerm(6.0, 6); poly->print();</pre>]
int n = 5;	[
int coeff[] = { 1, 2, 3, 4, 5 };	Term: (5 5)
int exp[] = { 1, 2, 3, 4, 5 };	Term: (4 4)
	Term: (3 3)
Polynomial p1;	Term: (2 2)
for (int i = 0; i < n; ++i)	Term: (1 1)
<pre>p1.insertTerm(coeff[i], exp[i]);</pre>]
p1.print();	

Answer: (penalty regime: 0, 0, 0, 5, 10 %)

```
void Polynomial::insertTerm(const Term &term)

void Polynomial::insertTerm(const Term &term)

void Polynomial::insertTerm(const Term &term)

for line in the series of the series o
```

```
8
          Term newterm(term.coeff + (terms->get(i)).coeff, term.exp);
 9
          if (newterm.coeff == 0)
            terms->removeAt(i);
10
11
          else
            terms->set(i, newterm);
12
13
          check = true;
          break;
14
15
        else if ((i < terms->size() - 1) &&
16
                 (term.exp < (terms->get(i)).exp) &&
17
                 (term.exp > (terms->get(i + 1)).exp))
18
19 ▼
          terms->add(i + 1, term);
20
          check = true;
21
22
          break;
23
24
25
      if (!check)
26 ▼
        if ((terms->size() == 0) || (term.exp > (terms->get(0)).exp))
27
          terms->add(0, term);
28
29
        else
          terms->add(term);
30
31
32
33
    void Polynomial::insertTerm(double coeff, int exp)
34
35 ▼
      if (coeff != 0)
36
37 ▼
38
        Term term;
        term.coeff = coeff;
39
        term.exp = exp;
40
        insertTerm(term);
41
42
43
```

poly poly poly poly poly poly	<pre>nomial *poly = new Polynomial(); ->insertTerm(6.0, 2); ->insertTerm(4.0, 5); ->insertTerm(4.0, 3); ->insertTerm(6.0, 5); ->insertTerm(-1.0, 0); ->insertTerm(-6.0, 6); ->insertTerm(6.0, 6); ->print();</pre>	Term:	(10 5) (4 3) (6 2) (-1 0)	Term:	(4 3) (6 2)	~
' -	• • • • • • • • • • • • • • • • • • • •					
		_		_		
int	n = 5; coeff[] = { 1, 2, 3, 4, 5 }; exp[] = { 1, 2, 3, 4, 5 };	Term:	(5 5) (4 4) (3 3)	Term: Term: Term:	(4 4)	•
for	<pre>nomial p1; (int i = 0; i < n; ++i) p1.insertTerm(coeff[i], exp[i]);</pre>		(2 2) (1 1)	Term: Term:		



Điểm cho bài nộp này: 1,00/1,00.



Điểm 0,90 của 1,00

Implement Iterator class in class SLinkedList.

Note: Iterator is a concept of repetitive elements on sequence structures. Iterator is implemented in class vector, list in STL container in C++ (https://www.geeksforgeeks.org/iterators-c-stl/). Your task is to implement the simple same class with iterator in C++ STL container.

Please read example and testcase carefully.

```
template <class T>
class SLinkedList
public:
    class Iterator; //forward declaration
    class Node;
                    //forward declaration
protected:
    Node *head;
   Node *tail;
    int count;
public:
    SLinkedList() : head(NULL), tail(NULL), count(0){};
    ~SLinkedList();
    void add(const T &e);
    void add(int index, const T &e);
    T removeAt(int index);
    bool removeItem(const T &removeItem);
    bool empty();
    int size();
    void clear();
    T get(int index);
    void set(int index, const T &e);
    int indexOf(const T &item);
    bool contains(const T &item);
    string toString();
    SLinkedList(const SLinkedList &list)
        this->count = 0;
        this->head = NULL;
        this->tail = NULL;
    }
    Iterator begin()
        return Iterator(this, true);
    Iterator end()
        return Iterator(this, false);
```

```
public:
    class Node
    private:
        T data;
        Node *next;
       friend class SLinkedList<T>;
    public:
        Node()
            next = 0;
        Node(Node *next)
            this->next = next;
        Node(T data, Node *next = NULL)
           this->data = data;
           this->next = next;
    };
    class Iterator
    private:
        SLinkedList<T> *pList;
        Node *current;
        int index; // corresponding with current node
    public:
        Iterator(SLinkedList<T> *pList, bool begin);
        Iterator &operator=(const Iterator &iterator);
        void set(const T &e);
        T &operator*();
        bool operator!=(const Iterator &iterator);
        // Prefix ++ overload
        Iterator & operator++();
```

```
// Postfix ++ overload
   Iterator operator++(int);
};
```

Test	Result
SLinkedList <int> list;</int>	
<pre>int size = 10; for(int idx=0; idx < size; idx++){ list.add(idx); }</pre>	
<pre>SLinkedList<int>::Iterator it; int expvalue = 0; for(it = list.begin(); it != list.end(); it++){ assert(*it == expvalue); expvalue += 1; }</int></pre>	
<pre>SLinkedList<int> list; int size = 10; for(int idx=0; idx < size; idx++){ list.add(idx); }</int></pre>	
<pre>SLinkedList<int>::Iterator it; int expvalue = 0; for(it = list.begin(); it != list.end(); ++it){ assert(*it == expvalue); expvalue += 1; }</int></pre>	

Answer: (penalty regime: 0, 0, 0, 5, 10 %)

```
template <class T>
    SLinkedList<T>::Iterator::Iterator(SLinkedList<T> *pList, bool begin)
 3 ▼
      this->pList = pList;
 4
 5
      if (begin)
 6 ▼
        if (pList != nullptr && pList->head != nullptr)
 8 •
          index = 0;
 9
          current = pList->head;
10
11
12
        else
13 ▼
14
          index = -1;
15
          current = nullptr;
16
17
18
      else
19 ▼
20
        current = nullptr;
        if (pList != nullptr)
21
          index = pList->count;
22
23
        else
          index = 0;
24
25
26
27
    template <class T>
28
29
    typename SLinkedList<T>::Iterator &SLinkedList<T>::Iterator::operator=(const Iterator &iterator)
30 ▼
      current = iterator.current;
31
32
      index = iterator.index;
      pList = iterator.pList;
33
34
      return *this;
35
36
    template <class T>
37
38 | void Slinkedlistats... Tterator..remove()
```

```
39 ▼ {
      if (current == nullptr)
40
        throw std::out_of_range("Segmentation fault!");
41
      if (index == 0)
42
43 ▼
        pList->removeAt(0);
44
45
        current = nullptr;
        index = -1;
46
47
48
      else
49 ▼
50
        int newIndex = index - 1;
        current->data = pList->get(newIndex);
51
52
        pList->removeAt(newIndex);
        index = newIndex;
53
54
55
56
57
   template <class T>
    void SLinkedList<T>::Iterator::set(const T &e)
58
59 ▼ {
      if (current == nullptr)
60
        throw std::out_of_range("Segmentation fault!");
61
      current->data = e;
62
```

```
Test
SLinkedList<int> list;
int size = 10;
for(int idx=0; idx < size; idx++){</pre>
   list.add(idx);
}
SLinkedList<int>::Iterator it;
int expvalue = 0;
for(it = list.begin(); it != list.end(); it++){
    assert(*it == expvalue);
    expvalue += 1;
SLinkedList<int> list;
int size = 10;
for(int idx=0; idx < size; idx++){</pre>
    list.add(idx);
}
SLinkedList<int>::Iterator it;
int expvalue = 0;
for(it = list.begin(); it != list.end(); ++it){
    assert(*it == expvalue);
    expvalue += 1;
```



Điểm cho bài nộp này: 1,00/1,00. Tính toán cho lần làm bài trước đó, điểm **0,90/1,00**.

Câu hỏi 4

Chính xác

Điểm 1,00 của 1,00

Class LinkedList is used to represent single linked list, described as the following:

```
class LinkedList {
  public:
    class Node;
  private:
    Node* head;
    Node* tail;
    int size;
  public:
    class Node {
       private:
         int value;
         Node* next;
         friend class LinkedList;
       public:
         Node() {
            this->next = NULL;
         Node(Node* node) {
            this->value = node->value;
            this->next = node->next;
         Node(int value, Node* next = NULL) {
            this->value = value;
            this->next = next;
```

```
};
LinkedList(): head(NULL), tail(NULL), size(0) {};
void partition(int k);
};
```

In this class; head, tail and size are the pointers of the first element, the last element and size of linked list.

Request: Implement function

```
void LinkedList::partition(int k);
```

To rearrange elements in this linked list by this way: split all elements of this linked list to 3 groups include: group I (the value of each element is smaller than k), group II (the value of each element is equal to k) and group III (the value of each element is larger than k); after that, move group I to the head of linked list, group II is after group I and group III is after group II. Note that the orders of the elements of each group are unchanged.

Example:

```
- The given linked list: 10->55->45->42->50
- k=45
```

In this case, group I includes elements with value 10 and 42, group II includes elements with 45 and group III includes elements with value 55 and 50. Rearrange by above way, this linked list will become 10->42->45->55->50 (the orders of th elements in each group is unchanged: 10 before 42 and 55 before 50).

Note: In this exercise, libraries iostream, sstream and using namespace std; have been used. You can add other functions for your answer, but you are not allowed to add other libraries.

Test	Result
<pre>LinkedList* 11 = new LinkedList(); 11->add(20); 11->add(30); 11->add(10); 11->add(60); 11->add(40); 11->add(45); 11->partition(45); cout << 11->toString() << "\n";</pre>	[20,30,10,40,45,60,55]

Answer: (penalty regime: 0 %)

```
1 void LinkedList::partition(int k) {
        if (head == NULL || head->next == NULL) {
 2 🔻
            // No need to partition if the list is empty or has only one element.
 3
 4
            return;
 5
 6
 7
        Node* group1 head = NULL;
        Node* group1_tail = NULL;
 8
 9
        Node* group2 head = NULL;
        Node* group2 tail = NULL;
10
        Node* group3 head = NULL;
11
12
        Node* group3 tail = NULL;
        Node* current = head;
13
14
        while (current != NULL) {
15 ▼
            Node* next = current->next;
16
17
            if (current->value < k) {</pre>
18 v
                // Add to group I
19
20 🔻
                if (group1 tail == NULL) {
21
                     group1 head = current;
22
                     group1_tail = current;
23
                     current->next = NULL;
24 ▼
                } else {
25
                     group1 tail->next = current;
                     group1 tail = current;
26
                     current->next = NULL;
27
28
            } else if (current->value == k) {
29 ▼
30
                // Add to group II
31 ▼
                if (group2 tail == NULL) {
32
                     group2 head = current;
                     group2 tail = current;
33
34
                     current->next = NULL;
35 ▼
                 } else {
36
                     group2_tail->next = current;
37
                     group2 tail = current;
                     current->next = NIIII.
```

```
39
            } else {
40 ▼
                // Add to group III
41
                if (group3 tail == NULL) {
42 ▼
                     group3 head = current;
43
                     group3 tail = current;
44
45
                     current->next = NULL;
                } else {
46 ▼
                     group3_tail->next = current;
47
48
                     group3 tail = current;
                     current->next = NULL;
49
50
51
52
53
            current = next;
54
55
        // Concatenate the three groups
56
        if (group1 head == NULL) {
57 ▼
            // If group I is empty, the new head becomes group II (if not empty) or group III.
58
59 ▼
            if (group2 head != NULL) {
                head = group2_head;
60
                group2 tail->next = group3 head;
61
62 ▼
            } else {
63
                head = group3 head;
64
        } else {
65 ▼
66
            head = group1 head;
            group1 tail->next = group2 head;
67
            if (group2_head != NULL) {
68 ▼
                group2_tail->next = group3_head;
69
70 ▼
            } else {
71
                 group1 tail->next = group3 head;
72
73
74
```

	Test	Expected	Got	
~	<pre>LinkedList* 11 = new LinkedList(); 11->add(20); 11->add(30); 11->add(10); 11->add(60); 11->add(40); 11- >add(45); 11->add(55); 11->partition(45); cout << 11->toString() << "\n";</pre>	[20,30,10,40,45,60,55]	[20,30,10,40,45,60,55]	~



Điểm cho bài nộp này: 1,00/1,00.



Điểm 1,00 của 1,00

Implement methods **add**, **size** in template class **SLinkedList** (**which implements List ADT**) representing the singly linked list with type T with the initialized frame. The description of each method is given in the code.

```
template <class T>
class SLinkedList {
public:
    class Node; // Forward declaration
protected:
    Node* head;
    Node* tail;
    int count;
public:
    SLinkedList();
    ~SLinkedList();
           add(T e);
    void
           add(int index, T e);
    void
            size();
    int
public:
    class Node {
    private:
        T data;
        Node* next;
        friend class SLinkedList<T>;
    public:
        Node() {
            next = 0;
        Node(Node* next) {
            this->next = next;
        Node(T data, Node* next) {
            this->data = data;
           this->next = next;
    };
```

Test	Result
<pre>SLinkedList<int> list; int size = 10;</int></pre>	[0,1,2,3,4,5,6,7,8,9]
<pre>for(int index = 0; index < size; index++){ list.add(index); }</pre>	
<pre>cout << list.toString();</pre>	
<pre>SLinkedList<int> list; int size = 10;</int></pre>	[9,8,7,6,5,4,3,2,1,0]
<pre>for(int index = 0; index < size; index++){ list.add(0, index); }</pre>	
<pre>cout << list.toString();</pre>	

Answer: (penalty regime: 0, 0, 0, 5, 10, 15, ... %)

```
template <class T>
 2 void SLinkedList<T>::add(const T& e) {
        Node* newNode = new Node(e, nullptr);
 3
 4
        if (head == nullptr) {
 5 ▼
            head = newNode;
 6
            tail = newNode;
 8 🔻
        } else {
            tail->next = newNode;
 9
10
            tail = newNode;
11
12
13
        count++;
14
15
```

```
16 | template<class T>
17 void SLinkedList<T>::add(int index, const T& e) {
            if (index < 0 || index > count) {
18 ▼
            throw std::out_of_range("Index out of bounds");
19
20
21
        if (index == count) {
22 🔻
23
            add(e);
24
            return;
25
26
27
        Node* newNode = new Node(e, nullptr);
28
29 ▼
        if (index == 0) {
            newNode->next = head;
30
            head = newNode;
31
        } else {
32 ▼
            Node* prevNode = head;
33
34 ▼
            for (int i = 0; i < index - 1; i++) {
                 prevNode = prevNode->next;
35
36
37
            newNode->next = prevNode->next;
38
            prevNode->next = newNode;
39
40
41
42
        count++;
43
44
45
    template<class T>
46
47 ▼ int SLinkedList<T>::size() {
        return count;
48
49
50
```

	Test	Expected	Got	
~	<pre>SLinkedList<int> list; int size = 10;</int></pre>	[0,1,2,3,4,5,6,7,8,9]	[0,1,2,3,4,5,6,7,8,9]	~
	<pre>for(int index = 0; index < size; index++){ list.add(index); }</pre>			
	<pre>cout << list.toString();</pre>			

Chính xác

Điểm cho bài nộp này: 1,00/1,00.



Điểm 1,00 của 1,00

Implement methods **get**, **set**, **empty**, **indexOf**, **contains** in template class **SLinkedList** (**which implements List ADT**) representing the singly linked list with type T with the initialized frame. The description of each method is given in the code.

```
template <class T>
class SLinkedList {
public:
    class Node; // Forward declaration
protected:
    Node* head;
    Node* tail;
    int count;
public:
    SLinkedList(): head(NULL), tail(NULL), count(0);
    ~SLinkedList() { };
            add(T e);
    void
           add(int index, T e);
    void
           size();
    int
    bool
            empty();
            get(int index);
    Τ
           set(int index, T e);
    void
           indexOf(T item);
    int
            contains(T item);
    bool
public:
    class Node {
    private:
        T data;
        Node* next;
        friend class SLinkedList<T>;
    public:
        Node() {
            next = 0;
        Node(Node* next) {
            this->next = next;
        Node(T data, Node* next = NULL) {
            this->data = data;
           this->next = next;
    };
```

Test	Result
SLinkedList <int> list; int values[] = {10, 15, 2, 6, 4, 7, 40, 8};</int>	[8,15,2,4,7,10,40,6]
int index[] = $\{0, 0, 1, 3, 2, 3, 5, 0\}$;	
int expvalues[]= {8, 15, 2, 4, 7, 10, 40, 6};	
<pre>for (int idx = 0; idx < 8; idx++){ list.add(index[idx], values[idx]); } assert(list.size() == 8); for (int idx = 0; idx < 8; idx++){ assert(list.get(idx) == expvalues[idx]); }</pre>	
<pre>cout << list.toString();</pre>	
SLinkedList <int> list;</int>	[]
<pre>assert(list.empty() == true); cout << list.toString();</pre>	

Answer: (penalty regime: 0, 0, 0, 5, 10, 15, ... %)

```
9
        Node *current = head;
        for (int i = 0; i < index; i++)
10
11 ▼
12
            current = current->next;
13
14
        return current->data;
15
16
17
    template <class T>
18
    void SLinkedList<T>:::set(int index, const T &e)
19
20 ▼
        if (index < 0 || index >= count)
21
22 🔻
            throw std::out_of_range("Index out of range");
23
24
25
        Node *current = head;
26
        for (int i = 0; i < index; i++)
27
28 ▼
            current = current->next;
29
30
31
32
        current->data = e;
33
34
    template <class T>
35
    bool SLinkedList<T>::empty()
36
37 ▼ {
38
        return count == 0;
39
40
   template <class T>
41
    int SLinkedList<T>::indexOf(const T &item)
42
43 ▼ {
44
        int index = 0;
        Node *current = head;
45
        while (current != nullptr)
46
47 ▼
            if (current->data == item)
48
49 ▼
```

```
return index;
50
51
52
            current = current->next;
53
            index++;
54
55
        return -1;
56
57
    template <class T>
58
    bool SLinkedList<T>::contains(const T &item)
59
60 ▼ {
        return indexOf(item) != -1;
61
62 }
```

	Test	Expected	Got	
~	<pre>SLinkedList<int> list; int values[] = {10, 15, 2, 6, 4, 7, 40, 8}; int index[] = {0, 0, 1, 3, 2, 3, 5, 0}; int expvalues[]= {8, 15, 2, 4, 7, 10, 40, 6}; for (int idx = 0; idx < 8; idx++){ list.add(index[idx], values[idx]); } assert(list.size() == 8); for (int idx = 0; idx < 8; idx++){ assert(list.size(idx) == expvalues[idx]); } cout << list.toString();</int></pre>	[8,15,2,4,7,10,40,6]	[8,15,2,4,7,10,40,6]	~

	Test	Expected	Got	
~	SLinkedList <int> list;</int>	[]	[]	~
	<pre>assert(list.empty() == true); cout << list.toString();</pre>			

Chính xác

Điểm cho bài nộp này: 1,00/1,00.



Điểm 1,00 của 1,00

Implement methods **removeAt**, **removeItem**, **clear** in template class **SLinkedList** (**which implements List ADT**) representing the singly linked list with type T with the initialized frame. The description of each method is given in the code.

```
template <class T>
class SLinkedList {
public:
    class Node; // Forward declaration
protected:
    Node* head;
    Node* tail;
    int count;
public:
    SLinkedList();
    ~SLinkedList();
           add(T e);
    void
           add(int index, T e);
    void
           size();
    int
    bool
           empty();
           size();
    int
           clear();
    void
           get(int index);
    T
            set(int index, T e);
    void
           indexOf(T item);
    int
           contains(T item);
    bool
    Т
            removeAt(int index);
            removeItem(T item);
    bool
public:
    class Node {
    private:
        T data;
       Node* next;
       friend class SLinkedList<T>;
    public:
        Node() {
            next = 0;
        Node(Node* next) {
           this->next = next;
        Node(T data, Node* next = NULL) {
           this->data = data;
```

```
this->next = next;
}
};
```

Test	Result
SLinkedList <int> list;</int>	[1,2,3,4,5,6,7,8,9]
<pre>for (int i = 0; i < 10; ++i) { list.add(i); }</pre>	
<pre>assert(list.get(0) == list.removeAt(0));</pre>	
<pre>cout << list.toString();</pre>	
SLinkedList <int> list;</int>	[0,1,2,3,4,5,6,7,8]
<pre>for (int i = 0; i < 10; ++i) { list.add(i); } assert(list.get(9) == list.removeAt(9));</pre>	
<pre>cout << list.toString();</pre>	
SLinkedList <int> list;</int>	[0,1,2,3,4,5,6,7,8]
<pre>for (int i = 0; i < 10; ++i) { list.add(i); } assert(list.removeItem(9));</pre>	
<pre>cout << list.toString();</pre>	

Answer: (penalty regime: 0, 0, 0, 5, 10, 15, ... %)

Reset answer

```
template <class T>
    T SLinkedList<T>::removeAt(int index)
 3 ▼
      if (index < 0 || index >= count)
 4
 5 ▼
        throw std::out of range("Index out of range");
 6
 8
      if (index == 0)
 9
10 •
        if (empty())
11
12 ▼
          throw std::runtime_error("List is empty, cannot remove from the front");
13
14
15
        Node *toRemove = head;
16
        T removedValue = toRemove->data;
17
        head = head->next;
18
        delete toRemove;
19
20
21
        if (head == nullptr)
22 •
23
          tail = nullptr;
24
25
26
        count--;
27
28
        return removedValue;
29
      else if (index == count - 1)
30
31 ▼
        if (empty())
32
33 ▼
          throw std::runtime_error("List is empty, cannot remove from the back");
34
35
36
        if (count == 1)
37
```

```
39
          T removedValue = head->data;
          delete head;
40
          head = nullptr;
41
          tail = nullptr;
42
43
          count--;
          return removedValue;
44
45
46
        else
47 ▼
          Node *previous = head;
48
          while (previous->next != tail)
49
50 ▼
            previous = previous->next;
51
52
53
54
          T removedValue = tail->data;
55
          delete tail;
          tail = previous;
56
57
          tail->next = nullptr;
58
          count--;
59
          return removedValue;
60
61
62
```

	Test	Expected	Got	
~	SLinkedList <int> list;</int>	[1,2,3,4,5,6,7,8,9]	[1,2,3,4,5,6,7,8,9]	~
	<pre>for (int i = 0; i < 10; ++i) { list.add(i);</pre>			
	<pre>} assert(list.get(0) == list.removeAt(0));</pre>			
	<pre>cout << list.toString();</pre>			

	Test	Expected	Got	
~	SLinkedList <int> list;</int>	[0,1,2,3,4,5,6,7,8]	[0,1,2,3,4,5,6,7,8]	~
	<pre>for (int i = 0; i < 10; ++i) { list.add(i); } assert(list.get(9) == list.removeAt(9));</pre>			
	<pre>cout << list.toString();</pre>			

Passed all tests! 🗸



Điểm cho bài nộp này: 1,00/1,00.

Câu hỏi 8

Chính xác

Điểm 1,00 của 1,00

Class LLNode representing a node of singly linked lists is declared as below:

```
class LLNode {
public:
    int val;
    LLNode* next;
    LLNode(); // Constructor: val = 0, next = nullptr
    LLNode(int val, LLNode* next); // Constructor with customized data
}
```

Given a singly linked list head node.

Your task is to implement a function with following prototype:

```
LLNode* reverseLinkedList(LLNode* head);
```

The function returns head node of the reversed singly linked list.

Note:

- The iostream library has been included and namespace std is being used. No other libraries are allowed.
- The constructors and methods of class LLNode have been defined fully so you do not need to redefine them.
- You can write helper functions.

For example:

```
Test

int arr[] = {13, 88, 60, 7, 192};
LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int));
LLNode::printList(head);
cout << "\n";
LLNode* newhead = reverseLinkedList(head);
LLNode::printList(newhead);
newhead->clear();
[13, 88, 60, 7, 192]
[192, 7, 60, 88, 13]
```

Answer: (penalty regime: 0 %)

Reset answer

```
LLNode *reverseLinkedList(LLNode *head)
 2 ▼ {
 3
        // STUDENT ANSWER
        LLNode *prev = nullptr;
 4
 5
        LLNode *current = head;
        LLNode *next = nullptr;
 6
 7
        while (current != nullptr)
 8
 9 🔻
            next = current->next;
10
            current->next = prev;
11
            prev = current;
12
            current = next;
13
14
15
16
        return prev;
17
```

	Test	Expected	Got	
~	<pre>int arr[] = {13, 88, 60, 7, 192}; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = reverseLinkedList(head); LLNode::printList(newhead); newhead->clear();</pre>	[13, 88, 60, 7, 192] [192, 7, 60, 88, 13]	[13, 88, 60, 7, 192] [192, 7, 60, 88, 13]	~
~	<pre>int arr[] = {}; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = reverseLinkedList(head); LLNode::printList(newhead); newhead->clear();</pre>			~
~	<pre>int arr[] = {31, 22, 46, 152, 14, 87, 196, 97, 5, 93}; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = reverseLinkedList(head); LLNode::printList(newhead); newhead->clear();</pre>	[31, 22, 46, 152, 14, 87, 196, 97, 5, 93] [93, 5, 97, 196, 87, 14, 152, 46, 22, 31]	[31, 22, 46, 152, 14, 87, 196, 97, 5, 93] [93, 5, 97, 196, 87, 14, 152, 46, 22, 31]	~

	Test	Expected	Got	
~	<pre>int arr[] = {115, 59, 178, 39, 109, 18, 154, 106, 94, 174, 51, 33, 132, 195, 161, 37, 61, 107, 120, 190}; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = reverseLinkedList(head); LLNode::printList(newhead); newhead->clear();</pre>	[115, 59, 178, 39, 109, 18, 154, 106, 94, 174, 51, 33, 132, 195, 161, 37, 61, 107, 120, 190] [190, 120, 107, 61, 37, 161, 195, 132, 33, 51, 174, 94, 106, 154, 18, 109, 39, 178, 59, 115]	[115, 59, 178, 39, 109, 18, 154, 106, 94, 174, 51, 33, 132, 195, 161, 37, 61, 107, 120, 190] [190, 120, 107, 61, 37, 161, 195, 132, 33, 51, 174, 94, 106, 154, 18, 109, 39, 178, 59, 115]	~

	Test	Expected	Got	
*	<pre>int arr[] = {104, 50, 154, 40, 15, 171, 56, 114, 67, 90, 46, 179, 152, 177, 139, 45, 18, 55, 38, 158, 8, 157, 143, 37, 16, 83, 173, 82, 156, 51, 124, 25, 68, 51, 194, 105, 44, 17, 97, 0, 150, 66, 71, 81, 11, 180, 148, 160, 127, 93, 108, 13, 122, 172, 39, 88, 62, 38, 61, 156, 45, 131, 69, 191, 123, 42, 103, 56, 69, 138, 185, 162, 192, 147, 71, 80, 12, 36, 191, 121, 194, 86, 92, 183, 164, 97, 185, 130, 29, 174, 112, 194, 185, 132, 27, 197, 158, 151, 51, 174}; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = reverseLinkedList(head); LLNode::printList(newhead); newhead->clear();</pre>	[104, 50, 154, 40, 15, 171, 56, 114, 67, 90, 46, 179, 152, 177, 139, 45, 18, 55, 38, 158, 8, 157, 143, 37, 16, 83, 173, 82, 156, 51, 124, 25, 68, 51, 194, 105, 44, 17, 97, 0, 150, 66, 71, 81, 11, 180, 148, 160, 127, 93, 108, 13, 122, 172, 39, 88, 62, 38, 61, 156, 45, 131, 69, 191, 123, 42, 103, 56, 69, 138, 185, 162, 192, 147, 71, 80, 12, 36, 191, 121, 194, 86, 92, 183, 164, 97, 185, 130, 29, 174, 112, 194, 185, 132, 27, 197, 158, 151, 51, 174] [174, 51, 151, 158, 197, 27, 132, 185, 194, 112, 174, 29, 130, 185, 97, 164, 183, 92, 86, 194, 121, 191, 36, 12, 80, 71, 147, 192, 162, 185, 138,	[104, 50, 154, 40, 15, 171, 56, 114, 67, 90, 46, 179, 152, 177, 139, 45, 18, 55, 38, 158, 8, 157, 143, 37, 16, 83, 173, 82, 156, 51, 124, 25, 68, 51, 194, 105, 44, 17, 97, 0, 150, 66, 71, 81, 11, 180, 148, 160, 127, 93, 108, 13, 122, 172, 39, 88, 62, 38, 61, 156, 45, 131, 69, 191, 123, 42, 103, 56, 69, 138, 185, 162, 192, 147, 71, 80, 12, 36, 191, 121, 194, 86, 92, 183, 164, 97, 185, 130, 29, 174, 112, 194, 185, 132, 27, 197, 158, 151, 51, 174] [174, 51, 151, 158, 197, 27, 132, 185, 194, 112, 174, 29, 130, 185, 97, 164, 183, 92, 86, 194, 121, 191, 36, 12, 80, 71, 147, 192, 162, 185, 138,	•
	<pre>newhead->clear();</pre>	132, 185, 194, 112, 174, 29, 130, 185, 97, 164, 183, 92, 86, 194, 121, 191, 36, 12, 80,	132, 185, 194, 112, 174, 29, 130, 185, 97, 164, 183, 92, 86, 194, 121, 191, 36, 12, 80,	

	Test	Expected	Got	
~	int arr[] = {106, 14, 71, 71, 166, 172, 128, 128,	[106, 14, 71, 71, 166, 172,	[106, 14, 71, 71, 166, 172,	~
	52, 113, 58, 184, 70, 73, 37, 83, 71, 46, 133, 100,	128, 128, 52, 113, 58, 184,	128, 128, 52, 113, 58, 184,	
	37, 186, 199, 69, 79, 71, 70, 13, 155, 90, 60, 82,	70, 73, 37, 83, 71, 46, 133,	70, 73, 37, 83, 71, 46, 133,	
	180, 125, 108, 160, 74, 93, 72, 152, 106, 11, 174,	100, 37, 186, 199, 69, 79, 71,	100, 37, 186, 199, 69, 79, 71,	
	164, 168, 6, 9, 41, 58, 65, 141, 22, 103, 49, 114,	70, 13, 155, 90, 60, 82, 180,	70, 13, 155, 90, 60, 82, 180,	
	197, 175, 131, 109, 135, 124, 19, 76, 109, 130, 15,	125, 108, 160, 74, 93, 72,	125, 108, 160, 74, 93, 72,	
	120, 12, 11, 77, 88, 56, 127, 162, 67, 133, 162,	152, 106, 11, 174, 164, 168,	152, 106, 11, 174, 164, 168,	
	22, 94, 122, 53, 132, 167, 111, 138, 61, 169, 64,	6, 9, 41, 58, 65, 141, 22,	6, 9, 41, 58, 65, 141, 22,	
	98, 159, 58, 147, 137, 50, 193, 190, 173, 28, 35,	103, 49, 114, 197, 175, 131,	103, 49, 114, 197, 175, 131,	
	108, 138, 110, 184, 82, 114, 199, 137, 156, 155,	109, 135, 124, 19, 76, 109,	109, 135, 124, 19, 76, 109,	
	167, 165, 134, 193, 22, 173, 176, 46, 61, 196, 137,	130, 15, 120, 12, 11, 77, 88,	130, 15, 120, 12, 11, 77, 88,	
	151, 69, 67, 87, 161, 72, 60, 70, 67, 109, 149, 16,	56, 127, 162, 67, 133, 162,	56, 127, 162, 67, 133, 162,	
	38, 127, 15, 12, 107, 48, 184, 185, 43, 178, 14,	22, 94, 122, 53, 132, 167,	22, 94, 122, 53, 132, 167,	
	188, 61, 79, 189, 144, 27, 41, 114, 182, 118, 76,	111, 138, 61, 169, 64, 98,	111, 138, 61, 169, 64, 98,	
	89, 126, 124, 195, 180, 133, 118, 96, 61, 95, 127,	159, 58, 147, 137, 50, 193,	159, 58, 147, 137, 50, 193,	
	40, 62, 102, 130, 174, 47, 131, 187, 103, 88, 109,	190, 173, 28, 35, 108, 138,	190, 173, 28, 35, 108, 138,	
	153, 110, 184, 72, 178, 41, 93, 112, 24, 156, 180,	110, 184, 82, 114, 199, 137,	110, 184, 82, 114, 199, 137,	
	150, 114, 172, 43, 170, 46, 166, 109, 193, 13, 17,	156, 155, 167, 165, 134, 193,	156, 155, 167, 165, 134, 193,	
	190, 153, 80, 106, 199, 163, 106, 39, 85, 56, 174,	22, 173, 176, 46, 61, 196,	22, 173, 176, 46, 61, 196,	
	189, 61, 72, 154, 149, 59, 110, 139, 189, 99, 40,	137, 151, 69, 67, 87, 161, 72,	137, 151, 69, 67, 87, 161, 72,	
	84, 180, 23, 13, 9, 192, 163, 88, 1, 3, 149, 132,	60, 70, 67, 109, 149, 16, 38,	60, 70, 67, 109, 149, 16, 38,	
	36, 34, 120, 40, 48, 32, 91, 166, 42, 155, 30, 111,	127, 15, 12, 107, 48, 184,	127, 15, 12, 107, 48, 184,	
	140, 6, 189, 169, 50, 15, 144, 67, 145, 169, 49,	185, 43, 178, 14, 188, 61, 79,	185, 43, 178, 14, 188, 61, 79,	
	135, 49, 76, 0, 105, 90, 60, 75, 88, 150, 88, 122,	189, 144, 27, 41, 114, 182,	189, 144, 27, 41, 114, 182,	
	11, 158, 12, 43, 182, 152, 112, 65, 149, 14, 194,	118, 76, 89, 126, 124, 195,	118, 76, 89, 126, 124, 195,	
	146, 120, 114, 178, 177, 159, 105, 45, 169, 152,	180, 133, 118, 96, 61, 95,	180, 133, 118, 96, 61, 95,	
	150, 60, 99, 39, 73, 101, 162, 173, 127, 122, 157,	127, 40, 62, 102, 130, 174,	127, 40, 62, 102, 130, 174,	
	116, 139, 57, 101, 121, 45, 133, 151, 171, 186,	47, 131, 187, 103, 88, 109,	47, 131, 187, 103, 88, 109,	
	186, 116, 4, 173, 118, 103, 70, 133, 158, 119, 47,	153, 110, 184, 72, 178, 41,	153, 110, 184, 72, 178, 41,	
	142, 111, 110, 96, 68, 118, 153, 178, 174, 130,	93, 112, 24, 156, 180, 150,	93, 112, 24, 156, 180, 150,	
	176, 186, 23, 193, 40, 175, 107, 184, 168, 185, 56,	114, 172, 43, 170, 46, 166,	114, 172, 43, 170, 46, 166,	
	167, 169, 68, 42, 75, 26, 174, 92, 46, 18, 85, 131,	109, 193, 13, 17, 190, 153,	109, 193, 13, 17, 190, 153,	
	164, 15, 116, 197, 88, 143, 8, 115, 199, 173, 142,	80, 106, 199, 163, 106, 39,	80, 106, 199, 163, 106, 39,	
	139, 162, 62, 7, 33, 2, 4, 54, 22, 135, 194, 34,	85, 56, 174, 189, 61, 72, 154,	85, 56, 174, 189, 61, 72, 154,	
	17, 90, 154, 71, 6, 156, 76, 66, 172, 157, 39, 92,	149, 59, 110, 139, 189, 99,	149, 59, 110, 139, 189, 99,	
	68, 169, 117, 166, 86, 153, 106, 63, 142, 190, 149,	40, 84, 180, 23, 13, 9, 192,	40, 84, 180, 23, 13, 9, 192,	

Got Test **Expected** 58, 31, 19, 114, 35, 110, 108, 103, 27, 139, 97, 163, 88, 1, 3, 149, 132, 36, 163, 88, 1, 3, 149, 132, 36, 166, 186, 164, 55, 19, 133, 194, 153, 38, 8, 87, 34, 120, 40, 48, 32, 91, 166, 34, 120, 40, 48, 32, 91, 166, 35, 179, 5, 32, 143, 104, 86, 184, 116, 70, 39, 22, 42, 155, 30, 111, 140, 6, 189, 42, 155, 30, 111, 140, 6, 189, 172, 28, 40, 72, 116, 192, 17, 159, 169, 143, 167, 169, 50, 15, 144, 67, 145, 169, 50, 15, 144, 67, 145, 77, 25, 128, 102, 140, 120, 140, 71, 56, 76, 16, 169, 49, 135, 49, 76, 0, 105, 169, 49, 135, 49, 76, 0, 105, 13, 144, 91, 166, 2, 74, 164, 153, 71, 37, 187, 90, 60, 75, 88, 150, 88, 122, 90, 60, 75, 88, 150, 88, 122, 104, 172, 122, 9, 109, 116, 173, 75, 70, 117, 57, 11, 158, 12, 43, 182, 152, 11, 158, 12, 43, 182, 152, 129, 171, 198, 194, 154, 177, 82, 103, 30, 174, 85, 112, 65, 149, 14, 194, 146, 112, 65, 149, 14, 194, 146, 191, 116, 30, 164, 155, 38, 38, 49, 84, 34, 111, 120, 114, 178, 177, 159, 105, 120, 114, 178, 177, 159, 105, 159}; 45, 169, 152, 150, 60, 99, 39, 45, 169, 152, 150, 60, 99, 39, LLNode* head = LLNode::createWithIterators(arr, arr 73, 101, 162, 173, 127, 122, 73, 101, 162, 173, 127, 122, + sizeof(arr) / sizeof(int)); 157, 116, 139, 57, 101, 121, 157, 116, 139, 57, 101, 121, LLNode::printList(head); 45, 133, 151, 171, 186, 186, 45, 133, 151, 171, 186, 186, cout << "\n"; 116, 4, 173, 118, 103, 70, 116, 4, 173, 118, 103, 70, LLNode* newhead = reverseLinkedList(head); 133, 158, 119, 47, 142, 111, 133, 158, 119, 47, 142, 111, LLNode::printList(newhead); 110, 96, 68, 118, 153, 178, 110, 96, 68, 118, 153, 178, newhead->clear(); 174, 130, 176, 186, 23, 193, 174, 130, 176, 186, 23, 193, 40, 175, 107, 184, 168, 185, 40, 175, 107, 184, 168, 185, 56, 167, 169, 68, 42, 75, 26, 56, 167, 169, 68, 42, 75, 26, 174, 92, 46, 18, 85, 131, 164, 174, 92, 46, 18, 85, 131, 164, 15, 116, 197, 88, 143, 8, 115, 15, 116, 197, 88, 143, 8, 115, 199, 173, 142, 139, 162, 62, 199, 173, 142, 139, 162, 62, 7, 33, 2, 4, 54, 22, 135, 194, 7, 33, 2, 4, 54, 22, 135, 194, 34, 17, 90, 154, 71, 6, 156, 34, 17, 90, 154, 71, 6, 156, 76, 66, 172, 157, 39, 92, 68, 76, 66, 172, 157, 39, 92, 68, 169, 117, 166, 86, 153, 106, 169, 117, 166, 86, 153, 106, 63, 142, 190, 149, 58, 31, 19, | 63, 142, 190, 149, 58, 31, 19, 114, 35, 110, 108, 103, 27, 114, 35, 110, 108, 103, 27, 139, 97, 166, 186, 164, 55, 139, 97, 166, 186, 164, 55, 19, 133, 194, 153, 38, 8, 87, 19, 133, 194, 153, 38, 8, 87, 35, 179, 5, 32, 143, 104, 86, 35, 179, 5, 32, 143, 104, 86, 184, 116, 70, 39, 22, 172, 28, 184, 116, 70, 39, 22, 172, 28, 40, 72, 116, 192, 17, 159, 40, 72, 116, 192, 17, 159, 169, 143, 167, 77, 25, 128, 169, 143, 167, 77, 25, 128, 102, 140, 120, 140, 71, 56, 102, 140, 120, 140, 71, 56, 76, 16, 13, 144, 91, 166, 2, 76, 16, 13, 144, 91, 166, 2,

Test	Expected	Got
	74, 164, 153, 71, 37, 187,	74, 164, 153, 71, 37, 187,
	104, 172, 122, 9, 109, 116,	104, 172, 122, 9, 109, 116,
	173, 75, 70, 117, 57, 129,	173, 75, 70, 117, 57, 129,
	171, 198, 194, 154, 177, 82,	171, 198, 194, 154, 177, 82,
	103, 30, 174, 85, 191, 116,	103, 30, 174, 85, 191, 116,
	30, 164, 155, 38, 38, 49, 84,	30, 164, 155, 38, 38, 49, 84,
	34, 111, 159]	34, 111, 159]
	[159, 111, 34, 84, 49, 38, 38,	[159, 111, 34, 84, 49, 38, 38,
	155, 164, 30, 116, 191, 85,	155, 164, 30, 116, 191, 85,
	174, 30, 103, 82, 177, 154,	174, 30, 103, 82, 177, 154,
	194, 198, 171, 129, 57, 117,	194, 198, 171, 129, 57, 117,
	70, 75, 173, 116, 109, 9, 122,	70, 75, 173, 116, 109, 9, 122,
	172, 104, 187, 37, 71, 153,	172, 104, 187, 37, 71, 153,
	164, 74, 2, 166, 91, 144, 13,	164, 74, 2, 166, 91, 144, 13,
	16, 76, 56, 71, 140, 120, 140,	16, 76, 56, 71, 140, 120, 140,
	102, 128, 25, 77, 167, 143,	102, 128, 25, 77, 167, 143,
	169, 159, 17, 192, 116, 72,	169, 159, 17, 192, 116, 72,
	40, 28, 172, 22, 39, 70, 116,	40, 28, 172, 22, 39, 70, 116,
	184, 86, 104, 143, 32, 5, 179,	184, 86, 104, 143, 32, 5, 179,
	35, 87, 8, 38, 153, 194, 133,	35, 87, 8, 38, 153, 194, 133,
	19, 55, 164, 186, 166, 97,	19, 55, 164, 186, 166, 97,
	139, 27, 103, 108, 110, 35,	139, 27, 103, 108, 110, 35,
	114, 19, 31, 58, 149, 190,	114, 19, 31, 58, 149, 190,
	142, 63, 106, 153, 86, 166,	142, 63, 106, 153, 86, 166,
	117, 169, 68, 92, 39, 157,	117, 169, 68, 92, 39, 157,
	172, 66, 76, 156, 6, 71, 154,	172, 66, 76, 156, 6, 71, 154,
	90, 17, 34, 194, 135, 22, 54,	90, 17, 34, 194, 135, 22, 54,
	4, 2, 33, 7, 62, 162, 139,	4, 2, 33, 7, 62, 162, 139,
	142, 173, 199, 115, 8, 143,	142, 173, 199, 115, 8, 143,
	88, 197, 116, 15, 164, 131,	88, 197, 116, 15, 164, 131,
	85, 18, 46, 92, 174, 26, 75,	85, 18, 46, 92, 174, 26, 75,
	42, 68, 169, 167, 56, 185,	42, 68, 169, 167, 56, 185,
	168, 184, 107, 175, 40, 193,	168, 184, 107, 175, 40, 193,
	23, 186, 176, 130, 174, 178,	23, 186, 176, 130, 174, 178,
	153, 118, 68, 96, 110, 111,	153, 118, 68, 96, 110, 111,
	142, 47, 119, 158, 133, 70,	142, 47, 119, 158, 133, 70,

Test	Expected	Got
	103, 118, 173, 4, 116, 186,	103, 118, 173, 4, 116, 186,
	186, 171, 151, 133, 45, 121,	186, 171, 151, 133, 45, 121,
	101, 57, 139, 116, 157, 122,	101, 57, 139, 116, 157, 122,
	127, 173, 162, 101, 73, 39,	127, 173, 162, 101, 73, 39,
	99, 60, 150, 152, 169, 45,	99, 60, 150, 152, 169, 45,
	105, 159, 177, 178, 114, 120,	105, 159, 177, 178, 114, 120,
	146, 194, 14, 149, 65, 112,	146, 194, 14, 149, 65, 112,
	152, 182, 43, 12, 158, 11,	152, 182, 43, 12, 158, 11,
	122, 88, 150, 88, 75, 60, 90,	122, 88, 150, 88, 75, 60, 90,
	105, 0, 76, 49, 135, 49, 169,	105, 0, 76, 49, 135, 49, 169,
	145, 67, 144, 15, 50, 169,	145, 67, 144, 15, 50, 169,
	189, 6, 140, 111, 30, 155, 42,	189, 6, 140, 111, 30, 155, 42,
	166, 91, 32, 48, 40, 120, 34,	166, 91, 32, 48, 40, 120, 34,
	36, 132, 149, 3, 1, 88, 163,	36, 132, 149, 3, 1, 88, 163,
	192, 9, 13, 23, 180, 84, 40,	192, 9, 13, 23, 180, 84, 40,
	99, 189, 139, 110, 59, 149,	99, 189, 139, 110, 59, 149,
	154, 72, 61, 189, 174, 56, 85,	154, 72, 61, 189, 174, 56, 85,
	39, 106, 163, 199, 106, 80,	39, 106, 163, 199, 106, 80,
	153, 190, 17, 13, 193, 109,	153, 190, 17, 13, 193, 109,
	166, 46, 170, 43, 172, 114,	166, 46, 170, 43, 172, 114,
	150, 180, 156, 24, 112, 93,	150, 180, 156, 24, 112, 93,
	41, 178, 72, 184, 110, 153,	41, 178, 72, 184, 110, 153,
	109, 88, 103, 187, 131, 47,	109, 88, 103, 187, 131, 47,
	174, 130, 102, 62, 40, 127,	174, 130, 102, 62, 40, 127,
	95, 61, 96, 118, 133, 180,	95, 61, 96, 118, 133, 180,
	195, 124, 126, 89, 76, 118,	195, 124, 126, 89, 76, 118,
	182, 114, 41, 27, 144, 189,	182, 114, 41, 27, 144, 189,
	79, 61, 188, 14, 178, 43, 185,	79, 61, 188, 14, 178, 43, 185,
	184, 48, 107, 12, 15, 127, 38,	184, 48, 107, 12, 15, 127, 38,
	16, 149, 109, 67, 70, 60, 72,	16, 149, 109, 67, 70, 60, 72,
	161, 87, 67, 69, 151, 137,	161, 87, 67, 69, 151, 137,
	196, 61, 46, 176, 173, 22,	196, 61, 46, 176, 173, 22,
	193, 134, 165, 167, 155, 156,	193, 134, 165, 167, 155, 156,
	137, 199, 114, 82, 184, 110,	137, 199, 114, 82, 184, 110,
	138, 108, 35, 28, 173, 190,	138, 108, 35, 28, 173, 190,
	193, 50, 137, 147, 58, 159,	193, 50, 137, 147, 58, 159,

Test	Expected	Got
	98, 64, 169, 61, 138, 111,	98, 64, 169, 61, 138, 111,
	167, 132, 53, 122, 94, 22,	167, 132, 53, 122, 94, 22,
	162, 133, 67, 162, 127, 56,	162, 133, 67, 162, 127, 56,
	88, 77, 11, 12, 120, 15, 130,	88, 77, 11, 12, 120, 15, 130,
	109, 76, 19, 124, 135, 109,	109, 76, 19, 124, 135, 109,
	131, 175, 197, 114, 49, 103,	131, 175, 197, 114, 49, 103,
	22, 141, 65, 58, 41, 9, 6,	22, 141, 65, 58, 41, 9, 6,
	168, 164, 174, 11, 106, 152,	168, 164, 174, 11, 106, 152,
	72, 93, 74, 160, 108, 125,	72, 93, 74, 160, 108, 125,
	180, 82, 60, 90, 155, 13, 70,	180, 82, 60, 90, 155, 13, 70,
	71, 79, 69, 199, 186, 37, 100,	71, 79, 69, 199, 186, 37, 100,
	133, 46, 71, 83, 37, 73, 70,	133, 46, 71, 83, 37, 73, 70,
	184, 58, 113, 52, 128, 128,	184, 58, 113, 52, 128, 128,
	172, 166, 71, 71, 14, 106]	172, 166, 71, 71, 14, 106]

	Test	Expected	Got	
~	int arr[] = {6, 82, 125, 139, 190, 149, 33, 100,	[6, 82, 125, 139, 190, 149,	[6, 82, 125, 139, 190, 149,	~
	40, 79, 99, 85, 125, 87, 116, 160, 18, 184, 147,	33, 100, 40, 79, 99, 85, 125,	33, 100, 40, 79, 99, 85, 125,	
	157, 52, 66, 166, 43, 59, 58, 188, 174, 84, 39,	87, 116, 160, 18, 184, 147,	87, 116, 160, 18, 184, 147,	
	185, 18, 60, 78, 161, 111, 129, 25, 56, 38, 59,	157, 52, 66, 166, 43, 59, 58,	157, 52, 66, 166, 43, 59, 58,	
	139, 122, 2, 139, 15, 126, 122, 19, 42, 152, 78,	188, 174, 84, 39, 185, 18, 60,	188, 174, 84, 39, 185, 18, 60,	
	119, 94, 120, 8, 18, 128, 157, 22, 4, 132, 29, 61,	78, 161, 111, 129, 25, 56, 38,	78, 161, 111, 129, 25, 56, 38,	
	114, 95, 161, 128, 86, 102, 101, 104, 73, 85, 30,	59, 139, 122, 2, 139, 15, 126,	59, 139, 122, 2, 139, 15, 126,	
	94, 126, 98, 183, 103, 121, 156, 189, 96, 96, 14,	122, 19, 42, 152, 78, 119, 94,	122, 19, 42, 152, 78, 119, 94,	
	65, 147, 121, 0, 111, 40, 52, 39, 53, 183, 66, 108,	120, 8, 18, 128, 157, 22, 4,	120, 8, 18, 128, 157, 22, 4,	
	53, 164, 6, 11, 30, 37, 107, 109, 104, 80, 118, 32,	132, 29, 61, 114, 95, 161,	132, 29, 61, 114, 95, 161,	
	63, 32, 197, 125, 50, 138, 64, 139, 188, 139, 23,	128, 86, 102, 101, 104, 73,	128, 86, 102, 101, 104, 73,	
	106, 107, 53, 117, 90, 135, 9, 3, 109, 53, 198, 40,	85, 30, 94, 126, 98, 183, 103,	85, 30, 94, 126, 98, 183, 103,	
	50, 44, 91, 7, 187, 176, 89, 26, 42, 46, 61, 150,	121, 156, 189, 96, 96, 14, 65,	121, 156, 189, 96, 96, 14, 65,	
	135, 7, 37, 182, 85, 72, 121, 69, 198, 88, 92, 166,	147, 121, 0, 111, 40, 52, 39,	147, 121, 0, 111, 40, 52, 39,	
	108, 124, 186, 142, 106, 160, 116, 188, 50, 79, 50,	53, 183, 66, 108, 53, 164, 6,	53, 183, 66, 108, 53, 164, 6,	
	87, 144, 133, 153, 138, 86, 115, 165, 12, 185, 123,	11, 30, 37, 107, 109, 104, 80,	11, 30, 37, 107, 109, 104, 80,	
	0, 123, 197, 4, 20, 169, 141, 16, 61, 111, 53, 172,	118, 32, 63, 32, 197, 125, 50,	118, 32, 63, 32, 197, 125, 50,	
	19, 194, 155, 0, 79, 59, 3, 175, 155, 19, 186, 113,	138, 64, 139, 188, 139, 23,	138, 64, 139, 188, 139, 23,	
	183, 22, 22, 55, 145, 7, 188, 47, 140, 133, 17, 10,	106, 107, 53, 117, 90, 135, 9,	106, 107, 53, 117, 90, 135, 9,	
	189, 93, 181, 73, 106, 72, 13, 31, 35, 199, 128,	3, 109, 53, 198, 40, 50, 44,	3, 109, 53, 198, 40, 50, 44,	
	43, 54, 75, 5, 108, 102, 170, 35, 42, 91, 55, 72,	91, 7, 187, 176, 89, 26, 42,	91, 7, 187, 176, 89, 26, 42,	
	91, 56, 24, 174, 11, 81, 174, 59, 16, 3, 73, 15,	46, 61, 150, 135, 7, 37, 182,	46, 61, 150, 135, 7, 37, 182,	
	29, 145, 186, 44, 92, 156, 125, 81, 186, 18, 103,	85, 72, 121, 69, 198, 88, 92,	85, 72, 121, 69, 198, 88, 92,	
	16, 189, 10, 4, 161, 65, 103, 196, 126, 180, 147,	166, 108, 124, 186, 142, 106,	166, 108, 124, 186, 142, 106,	
	78, 56, 71, 182, 118, 97, 86, 127, 35, 124, 138,	160, 116, 188, 50, 79, 50, 87,	160, 116, 188, 50, 79, 50, 87,	
	138, 196, 2, 52, 187, 101, 119, 108, 18, 52, 60,	144, 133, 153, 138, 86, 115,	144, 133, 153, 138, 86, 115,	
	36, 160, 177, 85, 46, 112, 77, 70, 85, 89, 178,	165, 12, 185, 123, 0, 123,	165, 12, 185, 123, 0, 123,	
	162, 35, 147, 147, 173, 190, 121, 133, 67, 40, 86,	197, 4, 20, 169, 141, 16, 61,	197, 4, 20, 169, 141, 16, 61,	
	63, 7, 72, 66, 86, 24, 179, 79, 180, 129, 199, 151,	111, 53, 172, 19, 194, 155, 0,	111, 53, 172, 19, 194, 155, 0,	
	74, 176, 105, 161, 147, 26, 173, 179, 162, 69, 62,	79, 59, 3, 175, 155, 19, 186,	79, 59, 3, 175, 155, 19, 186,	
	122, 191, 93, 63, 96, 119, 155, 65, 197, 18, 11,	113, 183, 22, 22, 55, 145, 7,	113, 183, 22, 22, 55, 145, 7,	
	53, 49, 64, 133, 85, 64, 86, 79, 135, 80, 109, 153,	188, 47, 140, 133, 17, 10,	188, 47, 140, 133, 17, 10,	
	178, 55, 61, 177, 43, 169, 64, 103, 65, 120, 89,	189, 93, 181, 73, 106, 72, 13,	189, 93, 181, 73, 106, 72, 13,	
	131, 144, 124, 167, 46, 27, 118, 77, 135, 198, 183,	31, 35, 199, 128, 43, 54, 75,	31, 35, 199, 128, 43, 54, 75,	
	84, 31, 131, 110, 82, 166, 99, 26, 125, 47, 56, 85,	5, 108, 102, 170, 35, 42, 91,	5, 108, 102, 170, 35, 42, 91,	
	155, 10, 0, 2, 180, 74, 180, 136, 26, 158, 178,	55, 72, 91, 56, 24, 174, 11,	55, 72, 91, 56, 24, 174, 11,	

	Test
	134, 119, 83, 128, 138, 64, 25, 82, 109, 185, 148,
	13, 129, 25, 79, 157, 198, 23, 76, 52, 41, 77, 7,
	188, 46, 28, 36, 127, 32, 129, 46, 45, 46, 6, 121,
	86, 88, 148, 34, 112, 122, 71, 134, 43, 40, 18,
	168, 171, 196, 101, 103, 94, 155, 20, 183, 151,
	126, 130, 31, 10, 16, 142, 163, 193, 36, 93, 2,
	110, 105, 144, 43, 169, 175, 143, 187, 21, 36, 174,
	123, 110, 139, 86, 144, 134, 37, 87, 122, 0, 90,
	30, 113, 188, 1, 114, 77, 141, 70, 35, 45, 127,
	164, 44, 66, 69, 12, 24, 85, 66, 84, 115, 126, 142,
	107, 99, 127, 75, 164, 191, 168, 57, 146, 166, 20,
	111, 107, 43, 124, 178, 175, 16, 122, 83, 186, 153,
	17, 164, 136, 170, 59, 83, 57, 179, 195, 11, 38,
	155, 196, 7, 162, 27, 169, 72, 20, 44, 39, 41, 29,
	140, 104, 33, 165, 116, 185, 112, 195, 118, 38,
	142, 4, 30, 117, 32, 138, 13, 144, 93, 89, 30, 47,
	40, 159, 99, 69, 38, 3, 23, 138, 131, 167, 154, 81,
	64, 144, 144, 170, 167, 190, 35, 179, 162, 31, 146,
	187, 25, 80, 10, 159, 67, 15, 196, 88, 103, 91, 55,
	45, 115, 5, 64, 101, 21, 67, 119, 87, 103, 178, 3,
	94, 152, 179, 41, 79, 121, 26, 193, 45, 62, 83, 73,
	183, 150, 22, 22, 79, 12, 101, 24, 7, 31, 26, 86,
	128, 134, 174, 10, 51, 88, 152, 22, 123, 163, 107,
	118, 82, 147, 84, 168, 147, 158, 146, 82, 64, 30,
	142, 67, 61, 71, 173, 77, 196, 121, 195, 1, 35,
	183, 115, 115, 3, 121, 45, 191, 106, 144, 166, 29,
	27, 144, 62, 137, 69, 155, 182, 134, 113, 195, 0,
	188, 56, 199, 100, 166, 53, 186, 128, 153, 86, 1,
	152, 67, 104, 44, 190, 168, 107, 126, 180, 179,
	124, 16, 135, 19, 131, 107, 142, 132, 108, 173, 76,
	135, 1, 141, 114, 52, 152, 34, 96, 47, 129, 170,
	125, 41, 115, 167, 14, 1, 39, 62, 187, 154, 44, 3,
	8, 167, 5, 95, 83, 124, 192, 123, 105, 22, 121, 26,
	86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194,
	139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11,
	14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116,

Expected 81, 174, 59, 16, 3, 73, 15, 29, 145, 186, 44, 92, 156, 125, 81, 186, 18, 103, 16, 189, 10, 4, 161, 65, 103, 196, 126, 180, 147, 78, 56, 71, 182, 118, 97, 86, 127, 35, 124, 138, 138, 196, 2, 52, 187, 101, 119, 108, 18, 52, 60, 36, 160, 177, 85, 46, 112, 77, 70, 85, 89, 178, 162, 35, 147, 147, 173, 190, 121, 133, 67, 40, 86, 63, 7, 72, 66, 86, 24, 179, 79, 180, 129, 199, 151, 74, 176, 105, 161, 147, 26, 173, 179, 162, 69, 62, 122, 191, 93, 63, 96, 119, 155, 65, 197, 18, 11, 53, 49, 64, 133, 85, 64, 86, 79, 135, 80, 109, 153, 178, 55, 61, 177, 43, 169, 64, 103, 65, 120, 89, 131, 144, 124, 167, 46, 27, 118, 77, 135, 198, 183, 84, 31, 131, 110, 82, 166, 99, 26, 125, 47, 56, 85, 155, 10, 0, 2, 180, 74, 180, 136, 26, 158, 178, 134, 119, 83, 128, 138, 64, 25, 82, 109, 185, 148, 13, 129, 25, 79, 157, 198, 23, 76, 52, 41, 77, 7, 188, 46, 28, 36, 127, 32, 129, 46, 45, 46, 6, 121, 86, 88, 148, 34, 112, 122, 71, 134, 43, 40, 18, 168, 171, 196, 101, 103, 94, 155, 20, 183, 151, 126, 130, 31, 10, 16, 142, 163, 193, 36, 93, 2,

Got 81, 174, 59, 16, 3, 73, 15, 29, 145, 186, 44, 92, 156, 125, 81, 186, 18, 103, 16, 189, 10, 4, 161, 65, 103, 196, 126, 180, 147, 78, 56, 71, 182, 118, 97, 86, 127, 35, 124, 138, 138, 196, 2, 52, 187, 101, 119, 108, 18, 52, 60, 36, 160, 177, 85, 46, 112, 77, 70, 85, 89, 178, 162, 35, 147, 147, 173, 190, 121, 133, 67, 40, 86, 63, 7, 72, 66, 86, 24, 179, 79, 180, 129, 199, 151, 74, 176, 105, 161, 147, 26, 173, 179, 162, 69, 62, 122, 191, 93, 63, 96, 119, 155, 65, 197, 18, 11, 53, 49, 64, 133, 85, 64, 86, 79, 135, 80, 109, 153, 178, 55, 61, 177, 43, 169, 64, 103, 65, 120, 89, 131, 144, 124, 167, 46, 27, 118, 77, 135, 198, 183, 84, 31, 131, 110, 82, 166, 99, 26, 125, 47, 56, 85, 155, 10, 0, 2, 180, 74, 180, 136, 26, 158, 178, 134, 119, 83, 128, 138, 64, 25, 82, 109, 185, 148, 13, 129, 25, 79, 157, 198, 23, 76, 52, 41, 77, 7, 188, 46, 28, 36, 127, 32, 129, 46, 45, 46, 6, 121, 86, 88, 148, 34, 112, 122, 71, 134, 43, 40, 18, 168, 171, 196, 101, 103, 94, 155, 20, 183, 151, 126, 130, 31, 10, 16, 142, 163, 193, 36, 93, 2,

Test	Expected	Got	
192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53,	110, 105, 144, 43, 169, 175,	110, 105, 144, 43, 169, 175,	
95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82,	143, 187, 21, 36, 174, 123,	143, 187, 21, 36, 174, 123,	
51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44,	110, 139, 86, 144, 134, 37,	110, 139, 86, 144, 134, 37,	
86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126,	87, 122, 0, 90, 30, 113, 188,	87, 122, 0, 90, 30, 113, 188,	
178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42,	1, 114, 77, 141, 70, 35, 45,	1, 114, 77, 141, 70, 35, 45,	
195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85,	127, 164, 44, 66, 69, 12, 24,	127, 164, 44, 66, 69, 12, 24,	
123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113,	85, 66, 84, 115, 126, 142,	85, 66, 84, 115, 126, 142,	
117, 136, 3, 33, 80, 25, 30, 4, 27, 107, 11, 125,	107, 99, 127, 75, 164, 191,	107, 99, 127, 75, 164, 191,	
157, 195, 131, 140, 80, 161, 111, 33, 15, 164, 178,	168, 57, 146, 166, 20, 111,	168, 57, 146, 166, 20, 111,	
164, 65, 166, 43, 130, 86, 104, 31, 91, 81, 193,	107, 43, 124, 178, 175, 16,	107, 43, 124, 178, 175, 16,	
190, 185, 191, 155, 149, 91, 79, 87, 116, 59, 194,	122, 83, 186, 153, 17, 164,	122, 83, 186, 153, 17, 164,	
115, 113, 85, 197, 33, 165, 74, 61, 57, 93, 92, 26,	136, 170, 59, 83, 57, 179,	136, 170, 59, 83, 57, 179,	
9, 116, 162, 127, 21, 39, 118, 73, 18, 113, 165,	195, 11, 38, 155, 196, 7, 162,	195, 11, 38, 155, 196, 7, 162,	
117, 183, 136, 94, 183, 101, 15, 143, 49, 174, 21,	27, 169, 72, 20, 44, 39, 41,	27, 169, 72, 20, 44, 39, 41,	
92, 129, 21, 142, 194, 30, 140, 65, 83, 28, 36, 58,	29, 140, 104, 33, 165, 116,	29, 140, 104, 33, 165, 116,	
27, 29, 184, 41, 82, 178, 43, 170, 67, 163, 155,	185, 112, 195, 118, 38, 142,	185, 112, 195, 118, 38, 142,	
38, 197, 116, 78, 106, 191, 57};	4, 30, 117, 32, 138, 13, 144,	4, 30, 117, 32, 138, 13, 144,	
LLNode* head = LLNode::createWithIterators(arr, arr	93, 89, 30, 47, 40, 159, 99,	93, 89, 30, 47, 40, 159, 99,	
<pre>+ sizeof(arr) / sizeof(int));</pre>	69, 38, 3, 23, 138, 131, 167,	69, 38, 3, 23, 138, 131, 167,	
<pre>LLNode::printList(head);</pre>	154, 81, 64, 144, 144, 170,	154, 81, 64, 144, 144, 170,	
cout << "\n";	167, 190, 35, 179, 162, 31,	167, 190, 35, 179, 162, 31,	
<pre>LLNode* newhead = reverseLinkedList(head);</pre>	146, 187, 25, 80, 10, 159, 67,	146, 187, 25, 80, 10, 159, 67,	
<pre>LLNode::printList(newhead);</pre>	15, 196, 88, 103, 91, 55, 45,	15, 196, 88, 103, 91, 55, 45,	
newhead->clear();	115, 5, 64, 101, 21, 67, 119,	115, 5, 64, 101, 21, 67, 119,	
	87, 103, 178, 3, 94, 152, 179,	87, 103, 178, 3, 94, 152, 179,	
	41, 79, 121, 26, 193, 45, 62,	41, 79, 121, 26, 193, 45, 62,	
	83, 73, 183, 150, 22, 22, 79,	83, 73, 183, 150, 22, 22, 79,	
	12, 101, 24, 7, 31, 26, 86,	12, 101, 24, 7, 31, 26, 86,	
	128, 134, 174, 10, 51, 88,	128, 134, 174, 10, 51, 88,	
	152, 22, 123, 163, 107, 118,	152, 22, 123, 163, 107, 118,	
	82, 147, 84, 168, 147, 158,	82, 147, 84, 168, 147, 158,	
	146, 82, 64, 30, 142, 67, 61,	146, 82, 64, 30, 142, 67, 61,	
	71, 173, 77, 196, 121, 195, 1,	71, 173, 77, 196, 121, 195, 1,	
	35, 183, 115, 115, 3, 121, 45,	35, 183, 115, 115, 3, 121, 45,	
	191, 106, 144, 166, 29, 27,	191, 106, 144, 166, 29, 27,	
	144, 62, 137, 69, 155, 182,	144, 62, 137, 69, 155, 182,	
I	I control of the cont	I and the second	I .

134, 113, 195, 0, 188, 56, 199, 100, 166, 53, 186, 128, 153, 86, 1, 152, 67, 104, 44, 190, 168, 107, 126, 180, 179, 124, 16, 135, 19, 131, 107, 142, 132, 108, 173, 76, 135, 1, 141, 114, 52, 152, 34, 96, 47, 129, 170, 125, 41, 115, 167, 14, 1, 39, 62, 187, 154, 44, 3, 8, 167, 5, 95, 83, 124, 192, 123, 108, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 195, 69, 42, 195, 19, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 1199, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27,snip, 7, 4, 30, 25, 80, 33, 3, 136, 172, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 136, 9, 164, 31, 122, 91, 195, 151, 189, 136, 141, 122, 91, 195, 133, 148, 195, 60, 43, 172, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 136, 9, 164, 31, 122, 91, 195, 151, 195, 136, 91, 192, 113, 196, 134, 112, 194, 113, 195, 106, 156, 53, 186, 128, 133, 816, 152, 67, 104, 44, 199, 166, 187, 125, 191, 106, 165, 135, 106, 135, 161, 171, 113, 129, 124, 163, 119, 164, 21, 194, 114, 125, 152, 34, 96, 147, 122, 123, 115, 119, 166, 167, 175, 53, 95, 119, 163, 147, 173, 129, 113, 117, 136, 3, 33, 80, 25, 30, 14, 27,snip, 7, 4, 30, 25, 180, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 136, 9, 164, 31, 122, 91, 195, 135, 91, 144, 115, 195, 185, 185, 122, 91, 195, 139, 164, 31, 122, 91, 195, 135, 91, 144, 115, 115, 196, 135, 122, 91, 195, 136, 136, 136, 137, 131, 129, 133, 164, 91, 164, 31, 122, 91, 195, 136, 91, 164, 31, 122, 91, 195, 136, 91, 164, 31, 122, 91, 195, 136, 91, 195, 136, 91, 195, 136, 91, 195, 136, 91, 195, 136, 91, 114, 115, 122, 91, 195, 136, 114, 115, 122, 91, 195, 136, 114, 114, 190, 114, 190, 114, 114, 114, 190, 114,	Test	Expected	Got	
153, 86, 1, 152, 67, 194, 44, 199, 168, 107, 126, 189, 179, 124, 16, 135, 19, 131, 187, 142, 132, 198, 173, 76, 135, 1, 141, 114, 52, 152, 34, 96, 47, 129, 179, 125, 41, 115, 167, 14, 1, 39, 62, 187, 154, 44, 3, 8, 167, 5, 95, 83, 124, 192, 123, 165, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 159, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 133, 180, 179, 113, 117, 136, 3, 33, 38, 125, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 163, 119, 161, 121, 76, 62, 123, 85, 143, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 30, 31, 34, 163, 119, 162, 121, 76, 62, 123, 85, 143, 149, 30, 76, 123, 124, 1199, 163, 147, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 163, 119, 161, 121, 76, 62, 123, 85, 143, 149, 30, 76, 123, 124, 125, 126, 123, 126		134, 113, 195, 0, 188, 56,	134, 113, 195, 0, 188, 56,	
190, 168, 107, 126, 180, 179, 124, 16, 135, 19, 131, 107, 124, 132, 108, 173, 76, 135, 1, 141, 114, 52, 152, 34, 96, 47, 129, 170, 125, 41, 115, 167, 14, 1, 39, 62, 187, 158, 174, 192, 123, 168, 177, 184, 187, 187, 187, 187, 187, 187, 187, 187		199, 100, 166, 53, 186, 128,	199, 100, 166, 53, 186, 128,	
124, 16, 135, 19, 131, 107, 142, 132, 108, 173, 76, 135, 1, 141, 114, 52, 152, 34, 96, 47, 129, 170, 125, 41, 115, 167, 14, 1, 39, 62, 187, 154, 115, 167, 14, 1, 39, 62, 187, 154, 192, 123, 165, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 156, 160, 167, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 109, 44, 86, 32, 107, 28, 113, 109, 44, 86, 32, 107, 28, 113, 113, 113, 123, 114, 139, 64, 114, 114, 114, 114, 114, 115, 115		153, 86, 1, 152, 67, 104, 44,	153, 86, 1, 152, 67, 104, 44,	
142, 132, 108, 173, 76, 135, 1, 141, 114, 52, 152, 34, 96, 47, 129, 170, 125, 41, 115, 167, 14, 1, 39, 62, 187, 154, 44, 3, 8, 167, 5, 95, 83, 124, 192, 123, 149, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 4, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 165, 60, 42, 195, 113, 171, 136, 3, 33, 80, 25, 30, 4, 27,snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 1121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30, 76, 143, 149, 30, 76, 143, 149, 30, 76, 143, 149, 30, 76, 141, 141, 142, 125, 141, 141, 141, 141, 151, 141, 141, 151, 141, 14		190, 168, 107, 126, 180, 179,	190, 168, 107, 126, 180, 179,	
1, 141, 114, 52, 152, 34, 96, 47, 129, 170, 125, 41, 115, 167, 14, 1, 39, 62, 187, 154, 44, 3, 8, 167, 5, 95, 83, 124, 192, 123, 105, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 191, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 47, 123, 129, 123, 147, 163, 119, 161, 121, 76, 62, 123, 85, 143, 149, 30, 143, 149, 30, 144, 163, 194, 164, 91, 194, 131, 195, 60, 42, 195, 194, 116, 119, 163, 47, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 161, 121, 76, 62, 123, 85, 143, 149, 30, 149, 162, 123, 147, 163, 119, 161, 121, 76, 62, 123, 85, 143, 149, 30, 149, 162, 123, 147, 163, 119, 161, 121, 76, 62, 123, 85, 143, 149, 30, 149, 163, 147, 163, 119, 161, 121, 76, 62, 123, 85, 143, 149, 30, 149, 30, 149, 30, 30, 30, 30, 30, 30, 30, 30, 30, 30		124, 16, 135, 19, 131, 107,	124, 16, 135, 19, 131, 107,	
47, 129, 170, 125, 41, 115, 167, 14, 1, 39, 62, 187, 154, 44, 3, 8, 167, 5, 95, 83, 124, 192, 123, 165, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 33, 186, 136, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 164, 121, 76, 62, 123, 85, 143, 149, 30,		142, 132, 108, 173, 76, 135,	142, 132, 108, 173, 76, 135,	
167, 14, 1, 39, 62, 187, 154, 44, 3, 8, 167, 5, 95, 83, 124, 192, 123, 105, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 36, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		1, 141, 114, 52, 152, 34, 96,	1, 141, 114, 52, 152, 34, 96,	
44, 3, 8, 167, 5, 95, 83, 124, 192, 123, 105, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 33, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 119, 163, 117, 113, 129, 123, 147, 163, 119, 163, 119, 163, 119, 163, 119, 163, 113, 129, 123, 147, 163, 119, 163,		47, 129, 170, 125, 41, 115,	47, 129, 170, 125, 41, 115,	
192, 123, 105, 22, 121, 26, 86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 26, 76, 121, 16, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 33, 3, 136, 117, 136, 3, 33, 80, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 161, 11, 76, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 1		167, 14, 1, 39, 62, 187, 154,	167, 14, 1, 39, 62, 187, 154,	
86, 174, 31, 73, 100, 146, 92, 194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 133, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 6		44, 3, 8, 167, 5, 95, 83, 124,	44, 3, 8, 167, 5, 95, 83, 124,	
194, 11, 61, 194, 139, 67, 97, 132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		192, 123, 105, 22, 121, 26,	192, 123, 105, 22, 121, 26,	
132, 24, 198, 113, 59, 16, 41, 27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 33, 33, 33, 33, 33, 33, 33, 3		86, 174, 31, 73, 100, 146, 92,	86, 174, 31, 73, 100, 146, 92,	
27, 11, 14, 172, 6, 142, 46, 184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 38, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		194, 11, 61, 194, 139, 67, 97,	194, 11, 61, 194, 139, 67, 97,	
184, 89, 150, 100, 65, 116, 192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 13, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		132, 24, 198, 113, 59, 16, 41,	132, 24, 198, 113, 59, 16, 41,	
192, 183, 60, 179, 119, 131, 66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30, 176, 62, 123, 85, 143, 149, 30,		27, 11, 14, 172, 6, 142, 46,	27, 11, 14, 172, 6, 142, 46,	
66, 160, 167, 175, 53, 95, 196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 66, 160, 167, 175, 53, 95, 196, 42, 77, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 49, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 136, 149, 196, 4, 27, 33, 106, 149, 196, 4, 27, 33, 106, 149, 196, 4, 27, 33, 106, 149, 196, 4, 27, 33, 106, 149, 196, 4, 27, 33, 106, 149, 196, 4, 27, 131, 111, 199, 44, 86, 32, 107, 196, 4, 27, 131, 199, 44, 86, 32, 107, 196, 4, 27, 131, 199, 44, 86, 32, 107, 181, 109, 44, 86, 32, 107, 181, 109, 44, 86, 32, 107, 181, 109, 44, 86, 32, 107, 196, 4, 27, 131, 197, 163, 199, 164, 19, 196, 121, 196, 4, 27, 131, 197, 163,		184, 89, 150, 100, 65, 116,	184, 89, 150, 100, 65, 116,	
196, 4, 27, 33, 106, 136, 49, 105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 163, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 149, 30, 149, 30, 149, 30, 149, 30, 30, 30, 30, 30, 30, 30, 30, 30, 30		192, 183, 60, 179, 119, 131,	192, 183, 60, 179, 119, 131,	
105, 54, 50, 82, 51, 196, 78, 64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 109, 44, 86, 32, 107, 28, 113, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 163, 147, 163, 119, 163, 147, 163, 119, 163, 119, 163, 119, 163, 119, 164, 119, 163, 147, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		66, 160, 167, 175, 53, 95,	66, 160, 167, 175, 53, 95,	
64, 70, 42, 131, 170, 111, 109, 44, 86, 32, 107, 28, 113, 109, 44, 86, 32, 107, 28, 113, 109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		196, 4, 27, 33, 106, 136, 49,	196, 4, 27, 33, 106, 136, 49,	
109, 44, 86, 32, 107, 28, 113, 81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 164, 9, 130, 30, 149, 119, 163, 147, 123, 129, 113, 119, 163, 147, 123, 129, 113, 119, 163, 147, 123, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 149, 30,		105, 54, 50, 82, 51, 196, 78,	105, 54, 50, 82, 51, 196, 78,	
81, 57, 165, 173, 62, 126, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		64, 70, 42, 131, 170, 111,	64, 70, 42, 131, 170, 111,	
178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 178, 34, 64, 87, 179, 41, 73, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 123, 147, 123, 129, 113, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		109, 44, 86, 32, 107, 28, 113,	109, 44, 86, 32, 107, 28, 113,	
148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 123, 147, 123, 129, 113, 119, 163, 147, 123, 129, 113, 119, 163, 147, 123, 129, 113, 120, 121, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 148, 105, 60, 42, 195, 91, 122, 31, 164, 9, 130, 30, 149, 122, 31, 164, 9, 130, 30, 149, 119, 163, 147, 123, 123, 123, 147, 123, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		81, 57, 165, 173, 62, 126,	81, 57, 165, 173, 62, 126,	
122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 122, 31, 164, 9, 130, 30, 149, 143, 85, 123, 62, 76, 121, 16, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 119, 163, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		178, 34, 64, 87, 179, 41, 73,	178, 34, 64, 87, 179, 41, 73,	
143, 85, 123, 62, 76, 121, 16, 143, 85, 123, 62, 76, 121, 16, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		148, 105, 60, 42, 195, 91,	148, 105, 60, 42, 195, 91,	
119, 163, 147, 123, 129, 113, 119, 163, 147, 123, 129, 113, 117, 136, 3, 33, 80, 25, 30, 117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		122, 31, 164, 9, 130, 30, 149,	122, 31, 164, 9, 130, 30, 149,	
117, 136, 3, 33, 80, 25, 30, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30,		143, 85, 123, 62, 76, 121, 16,	143, 85, 123, 62, 76, 121, 16,	
4, 27snip 7, 4, 30, 25, 4, 27snip 7, 4, 30, 25, 80, 33, 3, 136, 117, 113, 129, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		119, 163, 147, 123, 129, 113,	119, 163, 147, 123, 129, 113,	
80, 33, 3, 136, 117, 113, 129, 80, 33, 3, 136, 117, 113, 129, 123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		117, 136, 3, 33, 80, 25, 30,	117, 136, 3, 33, 80, 25, 30,	
123, 147, 163, 119, 16, 121, 76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		4, 27snip 7, 4, 30, 25,	4, 27snip 7, 4, 30, 25,	
76, 62, 123, 85, 143, 149, 30, 76, 62, 123, 85, 143, 149, 30,		80, 33, 3, 136, 117, 113, 129,	80, 33, 3, 136, 117, 113, 129,	
		123, 147, 163, 119, 16, 121,	123, 147, 163, 119, 16, 121,	
130, 9, 164, 31, 122, 91, 195, 130, 9, 164, 31, 122, 91, 195,		76, 62, 123, 85, 143, 149, 30,	76, 62, 123, 85, 143, 149, 30,	
		130, 9, 164, 31, 122, 91, 195,	130, 9, 164, 31, 122, 91, 195,	
42, 60, 105, 148, 73, 41, 179, 42, 60, 105, 148, 73, 41, 179,		42, 60, 105, 148, 73, 41, 179,	42, 60, 105, 148, 73, 41, 179,	
87, 64, 34, 178, 126, 62, 173, 87, 64, 34, 178, 126, 62, 173,		87, 64, 34, 178, 126, 62, 173,	87, 64, 34, 178, 126, 62, 173,	

Test	Expected	Got
	165, 57, 81, 113, 28, 107, 32,	165, 57, 81, 113, 28, 107, 32,
	86, 44, 109, 111, 170, 131,	86, 44, 109, 111, 170, 131,
	42, 70, 64, 78, 196, 51, 82,	42, 70, 64, 78, 196, 51, 82,
	50, 54, 105, 49, 136, 106, 33,	50, 54, 105, 49, 136, 106, 33,
	27, 4, 196, 95, 53, 175, 167,	27, 4, 196, 95, 53, 175, 167,
	160, 66, 131, 119, 179, 60,	160, 66, 131, 119, 179, 60,
	183, 192, 116, 65, 100, 150,	183, 192, 116, 65, 100, 150,
	89, 184, 46, 142, 6, 172, 14,	89, 184, 46, 142, 6, 172, 14,
	11, 27, 41, 16, 59, 113, 198,	11, 27, 41, 16, 59, 113, 198,
	24, 132, 97, 67, 139, 194, 61,	24, 132, 97, 67, 139, 194, 61,
	11, 194, 92, 146, 100, 73, 31,	11, 194, 92, 146, 100, 73, 31,
	174, 86, 26, 121, 22, 105,	174, 86, 26, 121, 22, 105,
	123, 192, 124, 83, 95, 5, 167,	123, 192, 124, 83, 95, 5, 167,
	8, 3, 44, 154, 187, 62, 39, 1,	8, 3, 44, 154, 187, 62, 39, 1,
	14, 167, 115, 41, 125, 170,	14, 167, 115, 41, 125, 170,
	129, 47, 96, 34, 152, 52, 114,	129, 47, 96, 34, 152, 52, 114,
	141, 1, 135, 76, 173, 108,	141, 1, 135, 76, 173, 108,
	132, 142, 107, 131, 19, 135,	132, 142, 107, 131, 19, 135,
	16, 124, 179, 180, 126, 107,	16, 124, 179, 180, 126, 107,
	168, 190, 44, 104, 67, 152, 1,	168, 190, 44, 104, 67, 152, 1,
	86, 153, 128, 186, 53, 166,	86, 153, 128, 186, 53, 166,
	100, 199, 56, 188, 0, 195,	100, 199, 56, 188, 0, 195,
	113, 134, 182, 155, 69, 137,	113, 134, 182, 155, 69, 137,
	62, 144, 27, 29, 166, 144,	62, 144, 27, 29, 166, 144,
	106, 191, 45, 121, 3, 115,	106, 191, 45, 121, 3, 115,
	115, 183, 35, 1, 195, 121,	115, 183, 35, 1, 195, 121,
	196, 77, 173, 71, 61, 67, 142,	196, 77, 173, 71, 61, 67, 142,
	30, 64, 82, 146, 158, 147,	30, 64, 82, 146, 158, 147,
	168, 84, 147, 82, 118, 107,	168, 84, 147, 82, 118, 107,
	163, 123, 22, 152, 88, 51, 10,	163, 123, 22, 152, 88, 51, 10,
	174, 134, 128, 86, 26, 31, 7,	174, 134, 128, 86, 26, 31, 7,
	24, 101, 12, 79, 22, 22, 150,	24, 101, 12, 79, 22, 22, 150,
	183, 73, 83, 62, 45, 193, 26,	183, 73, 83, 62, 45, 193, 26,
	121, 79, 41, 179, 152, 94, 3,	121, 79, 41, 179, 152, 94, 3,
	178, 103, 87, 119, 67, 21,	178, 103, 87, 119, 67, 21,
	101, 64, 5, 115, 45, 55, 91,	101, 64, 5, 115, 45, 55, 91,

Test	Expected	Got
	103, 88, 196, 15, 67, 159, 10,	103, 88, 196, 15, 67, 159, 10
	80, 25, 187, 146, 31, 162,	80, 25, 187, 146, 31, 162,
	179, 35, 190, 167, 170, 144,	179, 35, 190, 167, 170, 144,
	144, 64, 81, 154, 167, 131,	144, 64, 81, 154, 167, 131,
	138, 23, 3, 38, 69, 99, 159,	138, 23, 3, 38, 69, 99, 159,
	40, 47, 30, 89, 93, 144, 13,	40, 47, 30, 89, 93, 144, 13,
	138, 32, 117, 30, 4, 142, 38,	138, 32, 117, 30, 4, 142, 38,
	118, 195, 112, 185, 116, 165,	118, 195, 112, 185, 116, 165,
	33, 104, 140, 29, 41, 39, 44,	33, 104, 140, 29, 41, 39, 44,
	20, 72, 169, 27, 162, 7, 196,	20, 72, 169, 27, 162, 7, 196,
	155, 38, 11, 195, 179, 57, 83,	155, 38, 11, 195, 179, 57, 83
	59, 170, 136, 164, 17, 153,	59, 170, 136, 164, 17, 153,
	186, 83, 122, 16, 175, 178,	186, 83, 122, 16, 175, 178,
	124, 43, 107, 111, 20, 166,	124, 43, 107, 111, 20, 166,
	146, 57, 168, 191, 164, 75,	146, 57, 168, 191, 164, 75,
	127, 99, 107, 142, 126, 115,	127, 99, 107, 142, 126, 115,
	84, 66, 85, 24, 12, 69, 66,	84, 66, 85, 24, 12, 69, 66,
	44, 164, 127, 45, 35, 70, 141,	44, 164, 127, 45, 35, 70, 141,
	77, 114, 1, 188, 113, 30, 90,	77, 114, 1, 188, 113, 30, 90,
	0, 122, 87, 37, 134, 144, 86,	0, 122, 87, 37, 134, 144, 86,
	139, 110, 123, 174, 36, 21,	139, 110, 123, 174, 36, 21,
	187, 143, 175, 169, 43, 144,	187, 143, 175, 169, 43, 144,
	105, 110, 2, 93, 36, 193, 163,	105, 110, 2, 93, 36, 193, 163,
	142, 16, 10, 31, 130, 126,	142, 16, 10, 31, 130, 126,
	151, 183, 20, 155, 94, 103,	151, 183, 20, 155, 94, 103,
	101, 196, 171, 168, 18, 40,	101, 196, 171, 168, 18, 40,
	43, 134, 71, 122, 112, 34,	43, 134, 71, 122, 112, 34,
	148, 88, 86, 121, 6, 46, 45,	148, 88, 86, 121, 6, 46, 45,
	46, 129, 32, 127, 36, 28, 46,	46, 129, 32, 127, 36, 28, 46,
	188, 7, 77, 41, 52, 76, 23,	188, 7, 77, 41, 52, 76, 23,
	198, 157, 79, 25, 129, 13,	198, 157, 79, 25, 129, 13,
	148, 185, 109, 82, 25, 64,	148, 185, 109, 82, 25, 64,
	138, 128, 83, 119, 134, 178,	138, 128, 83, 119, 134, 178,
	158, 26, 136, 180, 74, 180, 2,	158, 26, 136, 180, 74, 180, 2,
	0, 10, 155, 85, 56, 47, 125,	0, 10, 155, 85, 56, 47, 125,
	26, 99, 166, 82, 110, 131, 31,	26, 99, 166, 82, 110, 131, 31,

84, 183, 198, 135, 77, 118, 27, 46, 167, 124, 144, 131, 89, 120, 65, 103, 64, 169, 43, 177, 61, 55, 178, 153, 109, 80, 135, 79, 86, 64, 85, 133, 84, 183, 198, 135, 77, 118, 27, 46, 167, 124, 144, 131, 89, 120, 65, 103, 64, 169, 43, 177, 61, 55, 178, 153, 109, 80, 135, 79, 86, 64, 85, 133,	
89, 120, 65, 103, 64, 169, 43, 89, 120, 65, 103, 64, 169, 43, 177, 61, 55, 178, 153, 109, 177, 61, 55, 178, 153, 109,	
177, 61, 55, 178, 153, 109,	
80, 135, 79, 86, 64, 85, 133, 80, 135, 79, 86, 64, 85, 133,	
64, 49, 53, 11, 18, 197, 65, 64, 49, 53, 11, 18, 197, 65,	
155, 119, 96, 63, 93, 191, 155, 119, 96, 63, 93, 191,	
122, 62, 69, 162, 179, 173, 122, 62, 69, 162, 179, 173,	
26, 147, 161, 105, 176, 74, 26, 147, 161, 105, 176, 74,	
151, 199, 129, 180, 79, 179, 151, 199, 129, 180, 79, 179,	
24, 86, 66, 72, 7, 63, 86, 40, 24, 86, 66, 72, 7, 63, 86, 40,	
67, 133, 121, 190, 173, 147, 67, 133, 121, 190, 173, 147,	
147, 35, 162, 178, 89, 85, 70, 147, 35, 162, 178, 89, 85, 70,	
77, 112, 46, 85, 177, 160, 36, 77, 112, 46, 85, 177, 160, 36,	
60, 52, 18, 108, 119, 101, 60, 52, 18, 108, 119, 101,	
187, 52, 2, 196, 138, 138, 187, 52, 2, 196, 138, 138,	
124, 35, 127, 86, 97, 118,	
182, 71, 56, 78, 147, 180,	
126, 196, 103, 65, 161, 4, 10, 126, 196, 103, 65, 161, 4, 10,	
189, 16, 103, 18, 186, 81,	
125, 156, 92, 44, 186, 145,	
29, 15, 73, 3, 16, 59, 174,	
81, 11, 174, 24, 56, 91, 72, 81, 11, 174, 24, 56, 91, 72,	
55, 91, 42, 35, 170, 102, 108, 55, 91, 42, 35, 170, 102, 108,	
5, 75, 54, 43, 128, 199, 35, 5, 75, 54, 43, 128, 199, 35,	
31, 13, 72, 106, 73, 181, 93, 31, 13, 72, 106, 73, 181, 93,	
189, 10, 17, 133, 140, 47,	
188, 7, 145, 55, 22, 22, 183, 188, 7, 145, 55, 22, 22, 183,	
113, 186, 19, 155, 175, 3, 59, 113, 186, 19, 155, 175, 3, 59,	
79, 0, 155, 194, 19, 172, 53, 79, 0, 155, 194, 19, 172, 53,	
111, 61, 16, 141, 169, 20, 4,	
197, 123, 0, 123, 185, 12,	
165, 115, 86, 138, 153, 133, 165, 115, 86, 138, 153, 133,	
144, 87, 50, 79, 50, 188, 116, 144, 87, 50, 79, 50, 188, 116,	
160, 106, 142, 186, 124, 108, 160, 106, 142, 186, 124, 108,	
166, 92, 88, 198, 69, 121, 72, 166, 92, 88, 198, 69, 121, 72,	

Test	Expected	Got
	85, 182, 37, 7, 135, 150, 61,	85, 182, 37, 7, 135, 150, 61,
	46, 42, 26, 89, 176, 187, 7,	46, 42, 26, 89, 176, 187, 7,
	91, 44, 50, 40, 198, 53, 109,	91, 44, 50, 40, 198, 53, 109,
	3, 9, 135, 90, 117, 53, 107,	3, 9, 135, 90, 117, 53, 107,
	106, 23, 139, 188, 139, 64,	106, 23, 139, 188, 139, 64,
	138, 50, 125, 197, 32, 63, 32,	138, 50, 125, 197, 32, 63, 32,
	118, 80, 104, 109, 107, 37,	118, 80, 104, 109, 107, 37,
	30, 11, 6, 164, 53, 108, 66,	30, 11, 6, 164, 53, 108, 66,
	183, 53, 39, 52, 40, 111, 0,	183, 53, 39, 52, 40, 111, 0,
	121, 147, 65, 14, 96, 96, 189,	121, 147, 65, 14, 96, 96, 189,
	156, 121, 103, 183, 98, 126,	156, 121, 103, 183, 98, 126,
	94, 30, 85, 73, 104, 101, 102,	94, 30, 85, 73, 104, 101, 102,
	86, 128, 161, 95, 114, 61, 29,	86, 128, 161, 95, 114, 61, 29,
	132, 4, 22, 157, 128, 18, 8,	132, 4, 22, 157, 128, 18, 8,
	120, 94, 119, 78, 152, 42, 19,	120, 94, 119, 78, 152, 42, 19,
	122, 126, 15, 139, 2, 122,	122, 126, 15, 139, 2, 122,
	139, 59, 38, 56, 25, 129, 111,	139, 59, 38, 56, 25, 129, 111,
	161, 78, 60, 18, 185, 39, 84,	161, 78, 60, 18, 185, 39, 84,
	174, 188, 58, 59, 43, 166, 66,	174, 188, 58, 59, 43, 166, 66,
	52, 157, 147, 184, 18, 160,	52, 157, 147, 184, 18, 160,
	116, 87, 125, 85, 99, 79, 40,	116, 87, 125, 85, 99, 79, 40,
	100, 33, 149, 190, 139, 125,	100, 33, 149, 190, 139, 125,
	82, 6]	82, 6]

	Test	Expected	Got
~	int arr[] = {12, 55, 161, 35, 13, 74, 88, 155, 173,	[12, 55, 161, 35, 13, 74, 88,	[12, 55, 161, 35, 13, 74, 88,
	132, 83, 198, 116, 53, 124, 177, 35, 77, 129, 127,	155, 173, 132, 83, 198, 116,	155, 173, 132, 83, 198, 116,
	44, 27, 124, 25, 49, 153, 167, 61, 192, 95, 92, 83,	53, 124, 177, 35, 77, 129,	53, 124, 177, 35, 77, 129,
	102, 159, 12, 11, 105, 89, 94, 91, 146, 48, 50,	127, 44, 27, 124, 25, 49, 153,	127, 44, 27, 124, 25, 49, 153,
	176, 163, 53, 95, 146, 173, 67, 122, 118, 110, 178,	167, 61, 192, 95, 92, 83, 102,	167, 61, 192, 95, 92, 83, 102,
	72, 150, 168, 24, 197, 43, 29, 12, 70, 78, 42, 29,	159, 12, 11, 105, 89, 94, 91, 146, 48, 50, 176, 163, 53, 95,	159, 12, 11, 105, 89, 94, 91,
	52, 131, 10, 19, 146, 87, 13, 84, 137, 171, 168,		146, 48, 50, 176, 163, 53, 95, 146, 173, 67, 122, 118, 110,
	74, 82, 65, 199, 179, 76, 95, 136, 121, 182, 51, 113, 146, 127, 125, 189, 27, 52, 155, 59, 41, 106,	146, 173, 67, 122, 118, 110, 178, 72, 150, 168, 24, 197,	178, 72, 150, 168, 24, 197,
	104, 47, 24, 85, 110, 53, 24, 112, 71, 68, 132, 62,	43, 29, 12, 70, 78, 42, 29,	43, 29, 12, 70, 78, 42, 29,
	94, 31, 101, 128, 107, 2, 183, 64, 191, 43, 97, 53,	52, 131, 10, 19, 146, 87, 13,	52, 131, 10, 19, 146, 87, 13,
	116, 110, 67, 136, 81, 142, 123, 190, 21, 17, 33,	84, 137, 171, 168, 74, 82, 65,	84, 137, 171, 168, 74, 82, 65,
	23, 57, 139, 68, 95, 131, 77, 108, 51, 8, 127, 97,	199, 179, 76, 95, 136, 121,	199, 179, 76, 95, 136, 121,
	102, 10, 28, 187, 28, 26, 14, 68, 191, 192, 82,	182, 51, 113, 146, 127, 125,	182, 51, 113, 146, 127, 125,
	100, 120, 113, 173, 115, 0, 72, 94, 4, 103, 80,	189, 27, 52, 155, 59, 41, 106,	189, 27, 52, 155, 59, 41, 106,
	110, 136, 198, 88, 189, 80, 0, 48, 199, 119, 174,	104, 47, 24, 85, 110, 53, 24,	104, 47, 24, 85, 110, 53, 24,
	3, 183, 31, 91, 6, 43, 99, 140, 40, 136, 85, 109,	112, 71, 68, 132, 62, 94, 31,	112, 71, 68, 132, 62, 94, 31,
	34, 31, 178, 24, 25, 104, 194, 79, 154, 94, 156,	101, 128, 107, 2, 183, 64,	101, 128, 107, 2, 183, 64,
	44, 45, 140, 129, 199, 5, 22, 0, 103, 55, 42, 2,	191, 43, 97, 53, 116, 110, 67,	191, 43, 97, 53, 116, 110, 67,
	69, 1, 40, 182, 126, 189, 49, 120, 175, 85, 188,	136, 81, 142, 123, 190, 21,	136, 81, 142, 123, 190, 21,
	14, 133, 89, 79, 164, 101, 112, 51, 80, 186, 187,	17, 33, 23, 57, 139, 68, 95,	17, 33, 23, 57, 139, 68, 95,
	80, 168, 70, 0, 100, 18, 75, 45, 62, 60, 17, 171,	131, 77, 108, 51, 8, 127, 97,	131, 77, 108, 51, 8, 127, 97,
	48, 189, 19, 38, 76, 164, 93, 162, 13, 48, 121, 80,	102, 10, 28, 187, 28, 26, 14,	102, 10, 28, 187, 28, 26, 14,
	97, 0, 26, 177, 102, 68, 56, 66, 3, 3, 174, 40, 65,	68, 191, 192, 82, 100, 120,	68, 191, 192, 82, 100, 120,
	70, 24, 94, 178, 125, 161, 5, 32, 41, 148, 164, 49,	113, 173, 115, 0, 72, 94, 4,	113, 173, 115, 0, 72, 94, 4,
	145, 145, 152, 1, 17, 130, 53, 16, 192, 46, 198,	103, 80, 110, 136, 198, 88,	103, 80, 110, 136, 198, 88,
	30, 136, 110, 177, 181, 180, 111, 126, 110, 37, 71,	189, 80, 0, 48, 199, 119, 174,	189, 80, 0, 48, 199, 119, 174,
	194, 102, 53, 59, 143, 90, 40, 128, 14, 144, 55,	3, 183, 31, 91, 6, 43, 99,	3, 183, 31, 91, 6, 43, 99,
	177, 0, 176, 7, 161, 73, 36, 162, 57, 14, 76, 109,	140, 40, 136, 85, 109, 34, 31,	140, 40, 136, 85, 109, 34, 31,
	188, 192, 28, 105, 112, 82, 122, 45, 192, 112, 122,	178, 24, 25, 104, 194, 79,	178, 24, 25, 104, 194, 79,
	196, 176, 120, 45, 75, 161, 181, 154, 150, 110, 41,	154, 94, 156, 44, 45, 140,	154, 94, 156, 44, 45, 140,
	91, 156, 198, 43, 3, 96, 90, 18, 46, 65, 81, 153,	129, 199, 5, 22, 0, 103, 55,	129, 199, 5, 22, 0, 103, 55,
	10, 20, 83, 19, 85, 40, 147, 88, 111, 10, 112, 193,	42, 2, 69, 1, 40, 182, 126,	42, 2, 69, 1, 40, 182, 126,
	49, 179, 165, 192, 78, 55, 64, 36, 57, 79, 144,	189, 49, 120, 175, 85, 188,	189, 49, 120, 175, 85, 188,
	140, 175, 145, 83, 65, 174, 197, 174, 9, 31, 164,	14, 133, 89, 79, 164, 101,	14, 133, 89, 79, 164, 101,
	62, 9, 176, 45, 151, 139, 12, 144, 171, 177, 151,	112, 51, 80, 186, 187, 80,	112, 51, 80, 186, 187, 80,

Got

Test 102, 181, 120, 61, 24, 31, 32, 50, 143, 192, 51, 55, 28, 138, 132, 20, 114, 131, 155, 41, 40, 194, 118, 34, 67, 173, 153, 186, 116, 193, 145, 190, 78, 169, 109, 125, 146, 74, 174, 175, 134, 119, 169, 124, 195, 96, 19, 6, 38, 72, 21, 138, 122, 23, 127, 59, 100, 165, 25, 199, 175, 153, 192, 38, 121, 177, 78, 40, 142, 122, 190, 95, 179, 155, 158, 5, 61, 5, 117, 150, 43, 5, 111, 161, 145, 69, 183, 147, 15, 135, 28, 101, 138, 164, 39, 160, 129, 69, 188, 54, 194, 112, 103, 34, 62, 84, 161, 170, 42, 8, 75, 132, 152, 121, 74, 31, 77, 147, 84, 187, 132, 43, 170, 52, 83, 42, 62, 147, 149, 164, 70, 21, 24, 145, 26, 16, 143, 76, 59, 68, 18, 27, 100, 158, 100, 102, 30, 75, 86, 115, 54, 66, 91, 136, 137, 154, 60, 107, 164, 55, 108, 71, 101, 47, 14, 64, 94, 154, 102, 89, 139, 89, 133, 180, 121, 62, 9, 10, 106, 37, 4, 131, 78, 129, 76, 48, 156, 89, 11, 15, 169, 132, 184, 46, 192, 12, 14, 180, 68, 127, 99, 165, 130, 139, 67, 124, 58, 75, 46, 166, 38, 37, 0, 92, 60, 183, 23, 129, 57, 121, 82, 21, 95, 123, 72, 169, 168, 106, 71, 36, 67, 40, 110, 166, 103, 170, 197, 187, 158, 190, 163, 42, 68, 172, 0, 94, 63, 164, 116, 156, 81, 16, 184, 190, 11, 100, 12, 40, 125, 3, 0, 153, 164, 91, 95, 109, 67, 5, 65, 64, 85, 190, 192, 61, 145, 185, 5, 40, 7, 136, 188, 185, 43, 128, 157, 186, 152, 29, 196, 74, 198, 182, 147, 115, 126, 11, 127, 129, 141, 52, 80, 189, 104, 123, 117, 104, 128, 164, 7, 36, 70, 60, 21, 63, 96, 16, 177, 145, 4, 72, 64, 145, 132, 4, 191, 146, 42, 53, 196, 84, 150, 127, 51, 32, 127, 133, 2, 4, 111, 142, 71, 120, 154, 87, 112, 56, 103, 121, 84, 35, 111, 52, 104, 43, 78, 108, 108, 6, 160, 171, 7, 180, 158, 127, 48, 98, 129, 157, 127, 7, 102, 94, 155, 37, 83, 65, 142, 82, 33, 194, 150, 31, 10, 121, 156, 113, 61, 142, 42, 22, 183, 108, 49, 146, 172, 123, 145, 131, 175, 26, 20, 153, 78,

Expected 168, 70, 0, 100, 18, 75, 45, 62, 60, 17, 171, 48, 189, 19, 38, 76, 164, 93, 162, 13, 48, 121, 80, 97, 0, 26, 177, 102, 68, 56, 66, 3, 3, 174, 40, 65, 70, 24, 94, 178, 125, 161, 5, 32, 41, 148, 164, 49, 145, 145, 152, 1, 17, 130, 53, 16, 192, 46, 198, 30, 136, 110, 177, 181, 180, 111, 126, 110, 37, 71, 194, 102, 53, 59, 143, 90, 40, 128, 14, 144, 55, 177, 0, 176, 7, 161, 73, 36, 162, 57, 14, 76, 109, 188, 192, 28, 105, 112, 82, 122, 45, 192, 112, 122, 196, 176, 120, 45, 75, 161, 181, 154, 150, 110, 41, 91, 156, 198, 43, 3, 96, 90, 18, 46, 65, 81, 153, 10, 20, 83, 19, 85, 40, 147, 88, 111, 10, 112, 193, 49, 179, 165, 192, 78, 55, 64, 36, 57, 79, 144, 140, 175, 145, 83, 65, 174, 197, 174, 9, 31, 164, 62, 9, 176, 45, 151, 139, 12, 144, 171, 177, 151, 102, 181, 120, 61, 24, 31, 32, 50, 143, 192, 51, 55, 28, 138, 132, 20, 114, 131, 155, 41, 40, 194, 118, 34, 67, 173, 153, 186, 116, 193, 145, 190, 78, 169, 109, 125, 146, 74, 174, 175, 134, 119, 169, 124, 195, 96, 19, 6, 38, 72, 21, 138, 122, 23, 127, 59, 100, 165, 25, 199, 175, 153, 192, 38, 121,

168, 70, 0, 100, 18, 75, 45, 62, 60, 17, 171, 48, 189, 19, 38, 76, 164, 93, 162, 13, 48, 121, 80, 97, 0, 26, 177, 102, 68, 56, 66, 3, 3, 174, 40, 65, 70, 24, 94, 178, 125, 161, 5, 32, 41, 148, 164, 49, 145, 145, 152, 1, 17, 130, 53, 16, 192, 46, 198, 30, 136, 110, 177, 181, 180, 111, 126, 110, 37, 71, 194, 102, 53, 59, 143, 90, 40, 128, 14, 144, 55, 177, 0, 176, 7, 161, 73, 36, 162, 57, 14, 76, 109, 188, 192, 28, 105, 112, 82, 122, 45, 192, 112, 122, 196, 176, 120, 45, 75, 161, 181, 154, 150, 110, 41, 91, 156, 198, 43, 3, 96, 90, 18, 46, 65, 81, 153, 10, 20, 83, 19, 85, 40, 147, 88, 111, 10, 112, 193, 49, 179, 165, 192, 78, 55, 64, 36, 57, 79, 144, 140, 175, 145, 83, 65, 174, 197, 174, 9, 31, 164, 62, 9, 176, 45, 151, 139, 12, 144, 171, 177, 151, 102, 181, 120, 61, 24, 31, 32, 50, 143, 192, 51, 55, 28, 138, 132, 20, 114, 131, 155, 41, 40, 194, 118, 34, 67, 173, 153, 186, 116, 193, 145, 190, 78, 169, 109, 125, 146, 74, 174, 175, 134, 119, 169, 124, 195, 96, 19, 6, 38, 72, 21, 138, 122, 23, 127, 59, 100, 165, 25, 199, 175, 153, 192, 38, 121,

Test 76, 85, 3, 42, 107, 5, 78, 61, 195, 47, 47, 93, 24, 173, 186, 112, 66, 1, 28, 40, 72, 56, 198, 105, 67, 44, 75, 152, 69, 162, 100, 127, 89, 20, 1, 70, 148, 15, 172, 140, 132, 79, 193, 79, 136, 89, 80, 40, 89, 161, 158, 82, 0, 150, 104, 12, 88, 19, 113, 141, 36, 143, 127, 40, 44, 183, 17, 64, 188, 162, 171, 126, 158, 14, 54, 72, 26, 57, 129, 124, 26, 194, 84, 86, 187, 97, 183 ...snip... 171, 71, 144, 180, 126, 156, 53, 196, 145, 138, 5, 173, 77, 23, 69, 148, 99, 86, 80, 70, 162, 197, 182, 197, 9, 65, 77, 64, 79, 85, 125, 105, 121, 3, 152, 144, 84, 178, 74, 105, 132, 113, 45, 1, 180, 27, 8, 143, 63, 155, 17, 40, 126, 65, 136, 51, 171, 126, 102, 183, 125, 108, 175, 121, 5, 122, 84, 138, 120, 127, 35, 129, 14, 116, 90, 61, 75, 47, 66, 198, 68, 13, 73, 180, 28, 112, 59, 128, 47, 185, 162, 50, 31, 136, 115, 106, 21, 82, 186, 107, 66, 98, 113, 92, 7, 131, 109, 73, 170, 116, 66, 130, 65, 133, 128, 75, 108, 33, 150, 187, 86, 93, 134, 41, 132, 24, 145, 124, 74, 3, 140, 137, 74, 123, 163, 155, 158, 133, 133, 165, 160, 105, 80, 84, 112, 74, 127, 187, 198, 69, 153, 86, 8, 184, 68, 76, 150, 197, 73, 135, 36, 54, 186, 37, 184, 147, 185, 140, 156, 122, 155, 89, 126, 31, 157, 170, 95, 189, 37, 133, 177, 195, 157, 16, 164, 154, 35, 163, 59, 158, 124, 67, 50, 3, 155, 64, 19, 18, 124, 104, 89, 156, 62, 173, 36, 182, 24, 165, 79, 85, 59, 10, 182, 100, 64, 97, 148, 156, 36, 190, 20, 148, 193, 80, 30, 33, 79, 120, 60, 23, 171, 136, 149, 48, 134, 130, 178, 85, 185, 46, 160, 131, 183, 160, 101, 7, 53, 153, 86, 134, 133, 61, 80, 150, 129, 134, 22, 193, 46, 159, 3, 195, 126, 91, 0, 105, 115, 54, 160, 44, 193, 188, 137, 15, 99, 49, 142, 53, 81, 104, 75, 87, 152, 161, 9, 21, 51, 117, 147, 82, 8, 83, 136, 69, 38, 120, 137, 21, 46, 90, 141, 68, 7, 30, 116, 184, 191, 115, 1, 46, 182, 103, 115, 71, 13, 24, 157,

Expected 177, 78, 40, 142, 122, 190, 95, 179, 155, 158, 5, 61, 5, 117, 150, 43, 5, 111, 161, 145, 69, 183, 147, 15, 135, 28, 101, 138, 164, 39, 160, 129, 69, 188, 54, 194, 112, 103, 34, 62, 84, 161, 170, 42, 8, 75, 132, 152, 121, 74, 31, 77, 147, 84, 187, 132, 43, 164, 70, 21, 24, 145, 26, 16, 143, 76, 59, 68, 18, 27, 100, 158, 100, 102, 30, 75, 86, 115, 54, 66, 91, 136, 137, 154, 60, 107, 164, 55, 108, 71, 101, 47, 14, 64, 94, 154, 102, 89, 139, 89, 133, 180, 121, 62, 9, 10, 106, 37, 4, 11, 15, 169, 132, 184, 46, 192, 12, 14, 180, 68, 127, 99, 165, 130, 139, 67, 124, 58, 75, 46, 166, 38, 37, 0, 92, 60, 183, 23, 129, 57, 121, 82, 21, 95, 123, 72, 169, 168, 106, 71, 36, 67, 40, 110, 166, 103, 170, 197, 187, 158, 190, 163, 42, 68, 172, 0, 94, 63, 164, 116, 156, 81, 16, 184, 190, 11, 100, 12, 40, 125, 3, 0, 153, 164, 91, 95, 109, 67, 5, 65, 64, 85, 190, 192, 61, 145, 185, 5, 40, 7, 136, 188, 185, 43, 128, 157, 186, 152, 29, 196, 74, 198, 182, 147, 115, 126, 11, 127, 129, 141,

Got 177, 78, 40, 142, 122, 190, 95, 179, 155, 158, 5, 61, 5, 117, 150, 43, 5, 111, 161, 145, 69, 183, 147, 15, 135, 28, 101, 138, 164, 39, 160, 129, 69, 188, 54, 194, 112, 103, 34, 62, 84, 161, 170, 42, 8, 75, 132, 152, 121, 74, 31, 77, 147, 84, 187, 132, 43, 170, 52, 83, 42, 62, 147, 149, | 170, 52, 83, 42, 62, 147, 149,164, 70, 21, 24, 145, 26, 16, 143, 76, 59, 68, 18, 27, 100, 158, 100, 102, 30, 75, 86, 115, 54, 66, 91, 136, 137, 154, 60, 107, 164, 55, 108, 71, 101, 47, 14, 64, 94, 154, 102, 89, 139, 89, 133, 180, 121, 62, 9, 10, 106, 37, 4, 131, 78, 129, 76, 48, 156, 89, | 131, 78, 129, 76, 48, 156, 89,11, 15, 169, 132, 184, 46, 192, 12, 14, 180, 68, 127, 99, 165, 130, 139, 67, 124, 58, 75, 46, 166, 38, 37, 0, 92, 60, 183, 23, 129, 57, 121, 82, 21, 95, 123, 72, 169, 168, 106, 71, 36, 67, 40, 110, 166, 103, 170, 197, 187, 158, 190, 163, 42, 68, 172, 0, 94, 63, 164, 116, 156, 81, 16, 184, 190, 11, 100, 12, 40, 125, 3, 0, 153, 164, 91, 95, 109, 67, 5, 65, 64, 85, 190, 192, 61, 145, 185, 5, 40, 7, 136, 188, 185, 43, 128, 157, 186, 152, 29, 196, 74, 198, 182, 147, 115, 126, 11, 127, 129, 141,

Test 56, 127, 189, 93, 93, 182, 78, 26, 158, 194, 9, 34, 148, 190, 63, 170, 109, 67, 14, 103, 110, 33, 56, 125, 97, 171, 132, 78, 72, 58, 35, 101, 128, 69, 102, 84, 177, 40, 175, 34, 181, 98, 45, 57, 31, 43, 115, 111, 158, 158, 75, 75, 122, 67, 143, 147, 199, 72, 112, 68, 192, 1, 195, 65, 181, 134, 81, 183, 175, 52, 125, 137, 195, 31, 108, 151, 38, 94, 104, 20, 80, 175, 85, 144, 108, 60, 0, 155, 79, 54, 124, 196, 127, 10, 182, 97, 134, 25, 44, 119, 119, 116, 194, 165, 136, 151, 149, 60, 192, 94, 100, 169, 115, 94, 148, 126, 108, 5, 34, 125, 42, 132, 150, 7, 198, 115, 30, 197, 180, 86, 8, 197, 128, 159, 93, 134, 43, 197, 82, 63, 110, 155, 129, 117, 174, 131, 32, 108, 56, 61, 199, 81, 199, 66, 72, 85, 116, 110, 50, 148, 118, 110, 30, 183, 82, 134, 86, 182, 164, 14, 122, 114, 31, 118, 126, 178, 113, 119, 137, 12, 179, 44, 134, 39, 167, 25, 168, 14, 83, 50, 106, 127, 125, 32, 189, 21, 87, 24, 85, 99, 21, 196, 14, 131, 84, 150, 42, 182, 125, 65, 31, 164, 91, 2, 23, 62, 138, 160, 184, 186, 88, 184, 5, 190, 112, 100, 68, 153, 100, 5, 50, 63, 75, 182, 36, 171, 124, 115, 151, 50, 114, 122, 178, 157, 96, 176, 2, 39, 47, 95, 198, 88, 149, 55, 77, 49, 104, 107, 117, 193, 108, 149, 125, 0, 65, 20, 197, 130, 128, 69, 100, 54, 119, 88, 42, 159, 60, 101, 56, 10, 30, 103, 188, 185, 74, 135, 97, 104, 197, 188, 183, 126, 117, 89, 135, 95, 133, 71, 9, 167, 0, 69, 57, 17, 125, 173, 55, 137, 100, 42, 183, 199, 105, 135, 193, 109, 158, 193, 89, 106, 158, 159, 177, 136, 127, 88, 86, 83, 63, 142, 113, 20, 195, 26, 38, 53, 156, 65, 146, 29, 131, 189, 32, 85, 157, 183, 125, 92, 122, 187, 93, 161, 67, 148, 181, 47, 195, 35, 35, 54, 80, 82, 83, 55, 34, 117, 139, 192, 75, 163, 41, 9, 150, 32, 36, 102, 117, 55, 120, 142, 14, 144, 165, 91, 174, 124, 2, 19, 1, 112, 55, 14, 184, 185, 24, 113, 20, 13, 177, 19, 154, 75,

Expected 52, 80, 189, 104, 123, 117, 104, 128, 164, 7, 36, 70, 60, 21, 63, 96, 16, 177, 145, 4, 72, 64, 145, 132, 4, 191, 146, 42, 53, 196, 84, 150, 127, 51, 32, 127, 133, 2, 4, 111, 142, 71, 120, 154, 87, 112, 56, 103, 121, 84, 35, 111, 52, 104, 43, 78, 108, 108, 6, 160, 171, 7, 180, 158, 127, 48, 98, 129, 157, 127, 7, 102, 94, 155, 37, 83, 65, 142, 82, 33, 194, 150, 31, 10, 121, 156, 113, 61, 142, 42, 22, 183, 108, 49, 146, 172, 123, 145, 131, 175, 26, 20, 153, 78, 76, 131, 175, 26, 20, 153, 78, 76, 85, 3, 42, 107, 5, 78, 61, 195, 47, 47, 93, 24, 173, 186, 195, 47, 47, 93, 24, 173, 186, 112, 66, 1, 28, 40, 72, 56, 198, 105, 67, 44, 75, 152, 69, 162, 100, 127, 89, 20, 1, 70, 148, 15, 172, 140, 132, 79, 193, 79, 136, 89, 80, 40, 89, 161, 158, 82, 0, 150, 104, 12, 88, 19, 113, 141, 36, 143, 127, 40, 44, 183, 17, 64, 188, | 127, 40, 44, 183, 17, 64, 188, 162, 171, 126, 158, 14, 54, 72, 26, 57, 129, 124, 26, 194, 84, 86, 187, 97, 183, 86, 129, 1 ...snip..., 129, 86, 183, 97, 187, 86, 84, 194, 26, 124, 129, 57, 26, 72, 54, 14, 158, 126, 171, 162, 188, 64, 17, 183, 44, 40, 127, 143, 36, 141, 113, 19, 88, 12, 104,

150, 0, 82, 158, 161, 89, 40,

Got 52, 80, 189, 104, 123, 117, 104, 128, 164, 7, 36, 70, 60, 21, 63, 96, 16, 177, 145, 4, 72, 64, 145, 132, 4, 191, 146, 42, 53, 196, 84, 150, 127, 51, 32, 127, 133, 2, 4, 111, 142, 71, 120, 154, 87, 112, 56, 103, 121, 84, 35, 111, 52, 104, 43, 78, 108, 108, 6, 160, 171, 7, 180, 158, 127, 48, 98, 129, 157, 127, 7, 102, 94, 155, 37, 83, 65, 142, 82, 33, 194, 150, 31, 10, 121, 156, 113, 61, 142, 42, 22, 183, 108, 49, 146, 172, 123, 145, 85, 3, 42, 107, 5, 78, 61, 112, 66, 1, 28, 40, 72, 56, 198, 105, 67, 44, 75, 152, 69, 162, 100, 127, 89, 20, 1, 70, 148, 15, 172, 140, 132, 79, 193, 79, 136, 89, 80, 40, 89, 161, 158, 82, 0, 150, 104, 12, 88, 19, 113, 141, 36, 143, 162, 171, 126, 158, 14, 54, 72, 26, 57, 129, 124, 26, 194, 84, 86, 187, 97, 183, 86, 129, 1 ...snip..., 129, 86, 183, 97, 187, 86, 84, 194, 26, 124, 129, 57, 26, 72, 54, 14, 158, 126, 171, 162, 188, 64, 17, 183, 44, 40, 127, 143, 36, 141, 113, 19, 88, 12, 104, 150, 0, 82, 158, 161, 89, 40,

Expected

Test
102, 22, 120, 51, 105, 168, 119, 136, 186, 162, 65, 13, 42, 177, 4, 6, 152, 179, 16, 1, 0, 28, 14, 93, 177, 2, 154, 10, 110, 38, 138, 193, 87, 116, 55, 188, 137, 20, 139, 153, 195, 34, 171, 140, 146, 146, 192, 19, 39, 129, 33, 142, 40, 144, 83, 190, 45, 2, 123, 36, 19, 40, 147, 13, 54, 107, 195, 117, 74, 50, 130, 147, 83, 68, 150, 132, 110, 152, 8, 138, 104, 35, 139, 69, 93, 162, 78, 170, 131, 128, 72, 148, 96, 3, 108, 184, 162, 82, 5, 70, 46, 137, 148, 37, 186, 17, 39, 93, 23, 129, 132, 11, 153, 170, 111, 112, 129, 169, 128, 11, 37, 198, 104}; LLNode* head = LLNode::createWithIterators(arr, arr
<pre>+ sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = reverseLinkedList(head); LLNode::printList(newhead); newhead->clear();</pre>

80, 89, 136, 79, 193, 79, 132, 140, 172, 15, 148, 70, 1, 20, 89, 127, 100, 162, 69, 152, 75, 44, 67, 105, 198, 56, 72, 40, 28, 1, 66, 112, 186, 173, 24, 93, 47, 47, 195, 61, 78, 5, 107, 42, 3, 85, 76, 78, 153, 20, 26, 175, 131, 145, 123, 172, 146, 49, 108, 183, 22, 42, 142, 61, 113, 156, 121, 10, 31, 150, 194, 33, 82, 142, 65, 83, 37, 155, 94, 102, 7, 127, 157, 129, 98, 48, 127, 158, 180, 7, 171, 160, 6, 108, 108, 78, 43, 104, 52, 111, 35, 84, 121, 103, 56, 112, 87, 154, 120, 71, 142, 111, 4, 2, 133, 127, 32, 51, 127, 150, 84, 196, 53, 42, 146, 191, 4, 132, 145, 64, 72, 4, 145, 177, 16, 96, 63, 21, 60, 70, 36, 7, 164, 128, 104, 117, 123, 104, 189, 80, 52, 141, 129, 127, 11, 126, 115, 147, 182, 198, 74, 196, 29, 152, 186, 157, 128, 43, 185, 188, 136, 7, 40, 5, 185, 145, 61, 192, 190, 85, 64, 65, 5, 67, 109, 95, 91, 164, 153, 0, 3, 125, 40, 12, 100, 11, 190, 184, 16, 81, 156, 116, 164, 63, 94, 0, 172, | 156, 116, 164, 63, 94, 0, 172, 68, 42, 163, 190, 158, 187, 197, 170, 103, 166, 110, 40, 67, 36, 71, 106, 168, 169, 72, 123, 95, 21, 82, 121, 57, 129, 23, 183, 60, 92, 0, 37, 38,

Got 80, 89, 136, 79, 193, 79, 132, 140, 172, 15, 148, 70, 1, 20, 89, 127, 100, 162, 69, 152, 75, 44, 67, 105, 198, 56, 72, 40, 28, 1, 66, 112, 186, 173, 24, 93, 47, 47, 195, 61, 78, 5, 107, 42, 3, 85, 76, 78, 153, 20, 26, 175, 131, 145, 123, 172, 146, 49, 108, 183, 22, 42, 142, 61, 113, 156, 121, 10, 31, 150, 194, 33, 82, 142, 65, 83, 37, 155, 94, 102, 7, 127, 157, 129, 98, 48, 127, 158, 180, 7, 171, 160, 6, 108, 108, 78, 43, 104, 52, 111, 35, 84, 121, 103, 56, 112, 87, 154, 120, 71, 142, 111, 4, 2, 133, 127, 32, 51, 127, 150, 84, 196, 53, 42, 146, 191, 4, 132, 145, 64, 72, 4, 145, 177, 16, 96, 63, 21, 60, 70, 36, 7, 164, 128, 104, 117, 123, 104, 189, 80, 52, 141, 129, 127, 11, 126, 115, 147, 182, 198, 74, 196, 29, 152, 186, 157, 128, 43, 185, 188, 136, 7, 40, 5, 185, 145, 61, 192, 190, 85, 64, 65, 5, 67, 109, 95, 91, 164, 153, 0, 3, 125, 40, 12, 100, 11, 190, 184, 16, 81, 68, 42, 163, 190, 158, 187, 197, 170, 103, 166, 110, 40, 67, 36, 71, 106, 168, 169, 72, 123, 95, 21, 82, 121, 57, 129, 23, 183, 60, 92, 0, 37, 38,

Test	Expected	Got
	166, 46, 75, 58, 124, 67, 139,	166, 46, 75, 58, 124, 67, 139,
	130, 165, 99, 127, 68, 180,	130, 165, 99, 127, 68, 180,
	14, 12, 192, 46, 184, 132,	14, 12, 192, 46, 184, 132,
	169, 15, 11, 89, 156, 48, 76,	169, 15, 11, 89, 156, 48, 76,
	129, 78, 131, 4, 37, 106, 10,	129, 78, 131, 4, 37, 106, 10,
	9, 62, 121, 180, 133, 89, 139,	9, 62, 121, 180, 133, 89, 139,
	89, 102, 154, 94, 64, 14, 47,	89, 102, 154, 94, 64, 14, 47,
	101, 71, 108, 55, 164, 107,	101, 71, 108, 55, 164, 107,
	60, 154, 137, 136, 91, 66, 54,	60, 154, 137, 136, 91, 66, 54,
	115, 86, 75, 30, 102, 100,	115, 86, 75, 30, 102, 100,
	158, 100, 27, 18, 68, 59, 76,	158, 100, 27, 18, 68, 59, 76,
	143, 16, 26, 145, 24, 21, 70,	143, 16, 26, 145, 24, 21, 70,
	164, 149, 147, 62, 42, 83, 52,	164, 149, 147, 62, 42, 83, 52,
	170, 43, 132, 187, 84, 147,	170, 43, 132, 187, 84, 147,
	77, 31, 74, 121, 152, 132, 75,	77, 31, 74, 121, 152, 132, 75,
	8, 42, 170, 161, 84, 62, 34,	8, 42, 170, 161, 84, 62, 34,
	103, 112, 194, 54, 188, 69,	103, 112, 194, 54, 188, 69,
	129, 160, 39, 164, 138, 101,	129, 160, 39, 164, 138, 101,
	28, 135, 15, 147, 183, 69,	28, 135, 15, 147, 183, 69,
	145, 161, 111, 5, 43, 150,	145, 161, 111, 5, 43, 150,
	117, 5, 61, 5, 158, 155, 179,	117, 5, 61, 5, 158, 155, 179,
	95, 190, 122, 142, 40, 78,	95, 190, 122, 142, 40, 78,
	177, 121, 38, 192, 153, 175,	177, 121, 38, 192, 153, 175,
	199, 25, 165, 100, 59, 127,	199, 25, 165, 100, 59, 127,
	23, 122, 138, 21, 72, 38, 6,	23, 122, 138, 21, 72, 38, 6,
	19, 96, 195, 124, 169, 119,	19, 96, 195, 124, 169, 119,
	134, 175, 174, 74, 146, 125,	134, 175, 174, 74, 146, 125,
	109, 169, 78, 190, 145, 193,	109, 169, 78, 190, 145, 193,
	116, 186, 153, 173, 67, 34,	116, 186, 153, 173, 67, 34,
	118, 194, 40, 41, 155, 131,	118, 194, 40, 41, 155, 131,
	114, 20, 132, 138, 28, 55, 51,	114, 20, 132, 138, 28, 55, 51,
	192, 143, 50, 32, 31, 24, 61,	192, 143, 50, 32, 31, 24, 61,
	120, 181, 102, 151, 177, 171,	120, 181, 102, 151, 177, 171,
	144, 12, 139, 151, 45, 176, 9,	144, 12, 139, 151, 45, 176, 9,
	62, 164, 31, 9, 174, 197, 174,	62, 164, 31, 9, 174, 197, 174,
	65, 83, 145, 175, 140, 144,	65, 83, 145, 175, 140, 144,
	, ,	, , , , , , , , , , , , , , , , , , ,

Test	Expected	Got
	79, 57, 36, 64, 55, 78, 192,	79, 57, 36, 64, 55, 78, 192,
	165, 179, 49, 193, 112, 10,	165, 179, 49, 193, 112, 10,
	111, 88, 147, 40, 85, 19, 83,	111, 88, 147, 40, 85, 19, 83,
	20, 10, 153, 81, 65, 46, 18,	20, 10, 153, 81, 65, 46, 18,
	90, 96, 3, 43, 198, 156, 91,	90, 96, 3, 43, 198, 156, 91,
	41, 110, 150, 154, 181, 161,	41, 110, 150, 154, 181, 161,
	75, 45, 120, 176, 196, 122,	75, 45, 120, 176, 196, 122,
	112, 192, 45, 122, 82, 112,	112, 192, 45, 122, 82, 112,
	105, 28, 192, 188, 109, 76,	105, 28, 192, 188, 109, 76,
	14, 57, 162, 36, 73, 161, 7,	14, 57, 162, 36, 73, 161, 7,
	176, 0, 177, 55, 144, 14, 128,	176, 0, 177, 55, 144, 14, 128,
	40, 90, 143, 59, 53, 102, 194,	40, 90, 143, 59, 53, 102, 194,
	71, 37, 110, 126, 111, 180,	71, 37, 110, 126, 111, 180,
	181, 177, 110, 136, 30, 198,	181, 177, 110, 136, 30, 198,
	46, 192, 16, 53, 130, 17, 1,	46, 192, 16, 53, 130, 17, 1,
	152, 145, 145, 49, 164, 148,	152, 145, 145, 49, 164, 148,
	41, 32, 5, 161, 125, 178, 94,	41, 32, 5, 161, 125, 178, 94,
	24, 70, 65, 40, 174, 3, 3, 66,	
	56, 68, 102, 177, 26, 0, 97,	56, 68, 102, 177, 26, 0, 97,
	80, 121, 48, 13, 162, 93, 164,	80, 121, 48, 13, 162, 93, 164,
	76, 38, 19, 189, 48, 171, 17,	76, 38, 19, 189, 48, 171, 17,
	60, 62, 45, 75, 18, 100, 0,	60, 62, 45, 75, 18, 100, 0,
	70, 168, 80, 187, 186, 80, 51,	
	112, 101, 164, 79, 89, 133,	112, 101, 164, 79, 89, 133,
	14, 188, 85, 175, 120, 49,	14, 188, 85, 175, 120, 49,
	189, 126, 182, 40, 1, 69, 2,	189, 126, 182, 40, 1, 69, 2,
	42, 55, 103, 0, 22, 5, 199,	42, 55, 103, 0, 22, 5, 199,
	129, 140, 45, 44, 156, 94,	129, 140, 45, 44, 156, 94,
	154, 79, 194, 104, 25, 24,	154, 79, 194, 104, 25, 24,
	178, 31, 34, 109, 85, 136, 40,	178, 31, 34, 109, 85, 136, 40,
	140, 99, 43, 6, 91, 31, 183,	140, 99, 43, 6, 91, 31, 183,
	3, 174, 119, 199, 48, 0, 80,	3, 174, 119, 199, 48, 0, 80,
	189, 88, 198, 136, 110, 80,	189, 88, 198, 136, 110, 80,
	103, 4, 94, 72, 0, 115, 173,	103, 4, 94, 72, 0, 115, 173,
	113, 120, 100, 82, 192, 191,	113, 120, 100, 82, 192, 191,
	,,,,,,	,,,,,,

Test	Expected	Got	
	102, 97, 127, 8, 51, 108, 77,	102, 97, 127, 8, 51, 108, 77,	
	131, 95, 68, 139, 57, 23, 33,	131, 95, 68, 139, 57, 23, 33,	
	17, 21, 190, 123, 142, 81,	17, 21, 190, 123, 142, 81,	
	136, 67, 110, 116, 53, 97, 43,	136, 67, 110, 116, 53, 97, 43,	
	191, 64, 183, 2, 107, 128,	191, 64, 183, 2, 107, 128,	
	101, 31, 94, 62, 132, 68, 71,	101, 31, 94, 62, 132, 68, 71,	
	112, 24, 53, 110, 85, 24, 47,	112, 24, 53, 110, 85, 24, 47,	
	104, 106, 41, 59, 155, 52, 27,	104, 106, 41, 59, 155, 52, 27,	
	189, 125, 127, 146, 113, 51,	189, 125, 127, 146, 113, 51,	
	182, 121, 136, 95, 76, 179,	182, 121, 136, 95, 76, 179,	
	199, 65, 82, 74, 168, 171,	199, 65, 82, 74, 168, 171,	
	137, 84, 13, 87, 146, 19, 10,	137, 84, 13, 87, 146, 19, 10,	
	131, 52, 29, 42, 78, 70, 12,	131, 52, 29, 42, 78, 70, 12,	
	29, 43, 197, 24, 168, 150, 72,	29, 43, 197, 24, 168, 150, 72,	
	178, 110, 118, 122, 67, 173,	178, 110, 118, 122, 67, 173,	
	146, 95, 53, 163, 176, 50, 48,	146, 95, 53, 163, 176, 50, 48,	
	146, 91, 94, 89, 105, 11, 12,	146, 91, 94, 89, 105, 11, 12,	
	159, 102, 83, 92, 95, 192, 61,	159, 102, 83, 92, 95, 192, 61,	
	167, 153, 49, 25, 124, 27, 44,	167, 153, 49, 25, 124, 27, 44,	
	127, 129, 77, 35, 177, 124,	127, 129, 77, 35, 177, 124,	
	53, 116, 198, 83, 132, 173,	53, 116, 198, 83, 132, 173,	
	155, 88, 74, 13, 35, 161, 55,	155, 88, 74, 13, 35, 161, 55,	
	12]	12]	

Expected

Got

	Test
~	int arr[] = {161, 86, 21, 22, 162, 98, 98, 173, 5, 27, 179, 24, 119, 72, 32, 73, 120, 115, 38, 21,
	134, 59, 141, 180, 198, 162, 143, 0, 64, 98, 34,
	181, 51, 179, 15, 128, 145, 152, 115, 10, 148, 75,
	126, 31, 1, 78, 171, 73, 4, 4, 119, 35, 116, 126,
	30, 171, 112, 194, 74, 39, 58, 82, 61, 84, 59, 49,
	185, 43, 47, 11, 29, 53, 146, 197, 115, 48, 4, 66,
	160, 18, 97, 88, 36, 77, 140, 59, 147, 100, 69, 40,
	179, 93, 104, 84, 39, 191, 120, 118, 122, 190, 59,
	195, 40, 61, 48, 49, 170, 164, 23, 70, 97, 146, 16,
	81, 173, 188, 102, 192, 13, 70, 77, 28, 90, 121,
	186, 74, 199, 166, 194, 28, 36, 98, 118, 88, 84,
	19, 93, 103, 3, 138, 170, 120, 44, 49, 104, 45, 65,
	87, 11, 127, 180, 178, 9, 38, 94, 52, 104, 179,
	111, 96, 106, 130, 21, 39, 135, 42, 0, 134, 113,
	79, 141, 171, 198, 114, 105, 48, 129, 94, 33, 31,
	186, 30, 40, 111, 95, 166, 33, 125, 35, 96, 77,
	166, 7, 160, 62, 188, 70, 73, 29, 39, 141, 81, 170,
	7, 106, 146, 154, 15, 27, 155, 157, 51, 91, 103,
	152, 78, 130, 156, 129, 21, 66, 119, 170, 176, 177,
	5, 159, 98, 91, 29, 51, 22, 199, 125, 192, 61, 70,
	10, 29, 85, 23, 4, 61, 52, 135, 9, 182, 14, 135,
	32, 199, 123, 30, 9, 102, 189, 24, 99, 136, 96, 15,
	126, 82, 162, 41, 147, 128, 21, 179, 1, 180, 147,
	109, 33, 97, 114, 5, 11, 128, 112, 128, 106, 75,
	128, 70, 158, 184, 21, 117, 25, 33, 79, 33, 77,
	137, 164, 147, 163, 57, 88, 199, 111, 85, 48, 163,
	50, 32, 124, 133, 7, 159, 19, 52, 67, 109, 35, 42,
	127, 34, 185, 55, 15, 113, 190, 49, 160, 74, 155,
	60, 6, 173, 198, 109, 195, 129, 125, 35, 111, 20,
	74, 95, 124, 83, 176, 115, 121, 4, 86, 114, 170,
	138, 145, 31, 86, 89, 174, 48, 89, 115, 88, 116,
	154, 58, 63, 130, 79, 167, 42, 28, 56, 171, 134,
	180, 58, 76, 79, 150, 157, 89, 30, 63, 144, 185,
	124, 196, 164, 97, 55, 21, 70, 189, 2, 147, 40, 82,
	1, 32, 186, 57, 150, 46, 173, 110, 77, 187, 33, 17,

[161, 86, 21, 22, 162, 98, 98, 173, 5, 27, 179, 24, 119, 72, 32, 73, 120, 115, 38, 21, 134, 59, 141, 180, 198, 162, 143, 0, 64, 98, 34, 181, 51, 179, 15, 128, 145, 152, 115, 10, 148, 75, 126, 31, 1, 78, 171, 73, 4, 4, 119, 35, 116, 126, 30, 171, 112, 194, 74, 39, 58, 82, 61, 84, 59, 49, 185, 43, 47, 11, 29, 53, 146, 197, 115, 48, 4, 66, 160, 18, 97, 88, 36, 77, 140, 59, 147, 100, 69, 40, 179, 93, 104, 84, 39, 191, 120, 118, 122, 190, 59, 195, 40, 61, 48, 49, 170, 164, 23, 70, 97, 146, 16, 81, 173, 188, 102, 192, 13, 70, 77, 28, 90, 121, 186, 74, 199, 166, 194, 28, 36, 98, 118, 88, 84, 19, 93, 103, 3, 138, 170, 120, 44, 49, 104, 45, 65, 87, 11, 127, 180, 178, 9, 38, 94, 52, 104, 179, 111, 96, 106, 130, 21, 39, 135, 42, 0, 134, 113, 79, 141, 171, 198, 114, 105, 48, 129, 94, 33, 31, 186, 30, 40, 111, 95, 166, 33, 125, 35, 96, 77, 166, 7, 160, 62, 188, 70, 73, 29, 39, 141, 81, 170, 7, 106, 146, 154, 15, 27, 155, 157, 51, 91, 103, 152, 78, 130, 156, 129, 21, 66, 119, 170, 176, 177, 5, 159, 98, 91, 29, 51, 22, 199, 125, 192, 61, 70, 10, 29, 85, 23, 4, 61, 52,

[161, 86, 21, 22, 162, 98, 98, 173, 5, 27, 179, 24, 119, 72, 32, 73, 120, 115, 38, 21, 134, 59, 141, 180, 198, 162, 143, 0, 64, 98, 34, 181, 51, 179, 15, 128, 145, 152, 115, 10, 148, 75, 126, 31, 1, 78, 171, 73, 4, 4, 119, 35, 116, 126, 30, 171, 112, 194, 74, 39, 58, 82, 61, 84, 59, 49, 185, 43, 47, 11, 29, 53, 146, 197, 115, 48, 4, 66, 160, 18, 97, 88, 36, 77, 140, 59, 147, 100, 69, 40, 179, 93, 104, 84, 39, 191, 120, 118, 122, 190, 59, 195, 40, 61, 48, 49, 170, 164, 23, 70, 97, 146, 16, 81, 173, 188, 102, 192, 13, 70, 77, 28, 90, 121, 186, 74, 199, 166, 194, 28, 36, 98, 118, 88, 84, 19, 93, 103, 3, 138, 170, 120, 44, 49, 104, 45, 65, 87, 11, 127, 180, 178, 9, 38, 94, 52, 104, 179, 111, 96, 106, 130, 21, 39, 135, 42, 0, 134, 113, 79, 141, 171, 198, 114, 105, 48, 129, 94, 33, 31, 186, 30, 40, 111, 95, 166, 33, 125, 35, 96, 77, 166, 7, 160, 62, 188, 70, 73, 29, 39, 141, 81, 170, 7, 106, 146, 154, 15, 27, 155, 157, 51, 91, 103, 152, 78, 130, 156, 129, 21, 66, 119, 170, 176, 177, 5, 159, 98, 91, 29, 51, 22, 199, 125, 192, 61, 70, 10, 29, 85, 23, 4, 61, 52,

Test
183, 52, 48, 108, 189, 112, 74, 135, 139, 134, 130,
57, 160, 8, 81, 160, 66, 146, 9, 99, 175, 158, 4,
93, 57, 50, 199, 20, 122, 61, 177, 19, 65, 13, 144,
93, 195, 197, 79, 116, 125, 53, 80, 145, 193, 26,
64, 28, 104, 168, 187, 149, 183, 133, 86, 4, 100,
31, 52, 135, 123, 57, 178, 138, 28, 18, 151, 28,
183, 198, 78, 127, 115, 162, 23, 152, 195, 2, 93,
96, 27, 61, 152, 130, 65, 91, 118, 158, 167, 142,
69, 173, 176, 175, 197, 94, 65, 114, 84, 185, 66,
4, 57, 2, 125, 156, 85, 159, 54, 176, 7, 173, 75,
106, 63, 121, 39, 115, 117, 59, 41, 29, 99, 111,
122, 95, 184, 79, 159, 109, 110, 187, 196, 119,
135, 115, 34, 131, 75, 102, 57, 133, 109, 100, 10,
37, 96, 89, 158, 194, 3, 178, 195, 102, 140, 173,
137, 106, 164, 188, 183, 172, 47, 179, 164, 189,
160, 171, 75, 112, 50, 165, 173, 136, 73, 58, 117,
25, 138, 123, 153, 98, 57, 61, 157, 129, 10, 175,
172, 111, 122, 151, 137, 102, 158, 25, 138, 40,
116, 17, 39, 146, 17, 156, 106, 57, 66, 162, 175,
131, 31, 63, 93, 74, 29, 18, 14, 76, 171, 13, 124,
22, 112, 70, 108, 91, 91, 109, 159, 175, 82, 167,
142, 81, 95, 98, 135, 16, 192, 99, 182, 77, 30, 69,
125, 82, 65, 66, 142, 169, 137, 142, 56, 64, 184,
50, 9, 27, 142, 135, 107, 11, 77, 171, 26, 158,
158, 9, 116, 110, 51, 124, 162, 150, 71, 20, 63,
27, 11, 125, 46, 63, 171, 67, 177, 140, 56, 163,
143, 191, 55, 190, 37, 171, 74, 183, 49, 175, 157,
183, 74, 114, 75, 30, 100, 95, 106, 85, 35, 156,
149, 114, 14, 7, 81, 180, 134, 130, 10, 120, 71,
62, 158, 187, 78, 95, 154, 161, 35, 199, 196, 141,
81, 149, 64, 145, 132, 119, 39, 49, 74, 197, 54,
163, 165, 144, 163, 129, 184, 27, 28, 3, 176, 177,
27, 54, 101, 31, 29, 130, 129, 19, 91, 123, 176,
78, 51, 101, 89, 126, 55, 117, 52, 54, 101, 30, 4,
146, 57, 10, 23, 166, 56, 26, 67, 102, 22, 175,
115, 108, 139, 121, 131, 189, 42, 184, 176, 77,

Expected 135, 9, 182, 14, 135, 32, 199, 123, 30, 9, 102, 189, 24, 99, 136, 96, 15, 126, 82, 162, 41, 147, 128, 21, 179, 1, 180, 147, 109, 33, 97, 114, 5, 11, 128, 112, 128, 106, 75, 128, 70, 158, 184, 21, 117, 25, 33, 79, 33, 77, 137, 164, 147, 163, 57, 88, 199, 111, 85, 48, 163, 50, 32, 124, 133, 7, 159, 19, 52, 67, 109, 35, 42, 127, 34, 185, 55, 15, 113, 190, 49, 160, 74, 155, 60, 6, 173, 198, | 160, 74, 155, 60, 6, 173, 198, 109, 195, 129, 125, 35, 111, 20, 74, 95, 124, 83, 176, 115, 121, 4, 86, 114, 170, 138, 145, 31, 86, 89, 174, 48, 89, 115, 88, 116, 154, 58, 63, 130, 79, 167, 42, 28, 56, 171, 130, 79, 167, 42, 28, 56, 171, 134, 180, 58, 76, 79, 150, 157, 89, 30, 63, 144, 185, 124, 196, 164, 97, 55, 21, 70, 124, 196, 164, 97, 55, 21, 70, 189, 2, 147, 40, 82, 1, 32, 186, 57, 150, 46, 173, 110, 77, 187, 33, 17, 183, 52, 48, 108, 189, 112, 74, 135, 139, 134, 130, 57, 160, 8, 81, 160, 66, 146, 9, 99, 175, 158, 4, 93, 57, 50, 199, 20, 122, 61, 177, 19, 65, 13, 144, 93, 195, 197, 79, 116, 125, 53, 80, 145, 193, 26, 64, 28, 104, 168, 187, 149, 183, 133, 86, 4, 100, 31, 52, 135, 123, 57, 178, 138, 28, 18, 151, 28, 183, 198, 78, 127, 115, 162,

Got 135, 9, 182, 14, 135, 32, 199, 123, 30, 9, 102, 189, 24, 99, 136, 96, 15, 126, 82, 162, 41, 147, 128, 21, 179, 1, 180, 147, 109, 33, 97, 114, 5, 11, 128, 112, 128, 106, 75, 128, 70, 158, 184, 21, 117, 25, 33, 79, 33, 77, 137, 164, 147, 163, 57, 88, 199, 111, 85, 48, 163, 50, 32, 124, 133, 7, 159, 19, 52, 67, 109, 35, 42, 127, 34, 185, 55, 15, 113, 190, 49, 109, 195, 129, 125, 35, 111, 20, 74, 95, 124, 83, 176, 115, 121, 4, 86, 114, 170, 138, 145, 31, 86, 89, 174, 48, 89, 115, 88, 116, 154, 58, 63, 134, 180, 58, 76, 79, 150, 157, 89, 30, 63, 144, 185, 189, 2, 147, 40, 82, 1, 32, 186, 57, 150, 46, 173, 110, 77, 187, 33, 17, 183, 52, 48, 108, 189, 112, 74, 135, 139, 134, 130, 57, 160, 8, 81, 160, 66, 146, 9, 99, 175, 158, 4, 93, 57, 50, 199, 20, 122, 61, 177, 19, 65, 13, 144, 93, 195, 197, 79, 116, 125, 53, 80, 145, 193, 26, 64, 28, 104, 168, 187, 149, 183, 133, 86, 4, 100, 31, 52, 135, 123, 57, 178, 138, 28, 18, 151, 28, 183, 198, 78, 127, 115, 162,

Got

Test 194, 66, 91, 12, 16, 116, 184, 144, 36, 180, 194, 13, 155, 174, 186, 99, 109, 78, 111, 0, 16, 150, 72, 29, 61, 168, 168, 156, 33, 6, 41, 34, 94, 111, 84, 138, 107, 93, 191, 163, 66, 117, 24, 42, 97, 95, 17, 83, 131, 79, 29, 60, 31, 170, 163, 114, 1, 5, 88, 129, 192, 51, 97, 182, 144, 45, 2, 55, 24, 111, 0, 181, 63, 9, 174, 88, 171, 163, 70, 124, 34, 124, 69, 132, 140, 45, 52, 156, 33, 73, 101 ...snip... 1, 68, 133, 165, 136, 33, 175, 48, 79, 135, 86, 101, 172, 29, 63, 20, 65, 107, 193, 2, 148, 118, 21, 73, 154, 4, 159, 106, 176, 82, 188, 136, 194, 4, 156, 135, 159, 158, 122, 109, 141, 112, 26, 175, 1, 7, 147, 55, 50, 74, 69, 53, 79, 105, 92, 156, 61, 61, 69, 15, 5, 108, 160, 91, 150, 92, 79, 94, 199, 58, 166, 8, 31, 163, 132, 145, 137, 82, 193, 75, 178, 163, 88, 74, 77, 25, 87, 73, 9, 171, 68, 95, 113, 91, 42, 98, 36, 50, 93, 18, 46, 118, 115, 114, 7, 78, 115, 34, 3, 8, 74, 88, 17, 32, 171, 56, 128, 52, 102, 65, 71, 77, 45, 98, 99, 193, 75, 22, 54, 39, 150, 148, 110, 106, 183, 105, 156, 122, 176, 58, 38, 151, 101, 45, 32, 7, 165, 151, 62, 50, 75, 115, 181, 60, 184, 73, 11, 28, 11, 38, 67, 50, 60, 83, 45, 46, 61, 40, 30, 126, 10, 130, 68, 72, 195, 178, 21, 17, 39, 144, 161, 37, 43, 120, 108, 105, 20, 196, 112, 196, 105, 34, 75, 53, 84, 119, 157, 81, 11, 52, 181, 28, 2, 56, 164, 178, 83, 95, 50, 62, 57, 74, 151, 179, 161, 54, 189, 34, 185, 137, 116, 19, 190, 106, 142, 110, 49, 113, 101, 172, 137, 191, 193, 98, 23, 39, 110, 103, 134, 53, 13, 78, 66, 13, 82, 102, 50, 71, 23, 135, 33, 162, 150, 167, 137, 31, 196, 63, 33, 184, 45, 72, 185, 80, 50, 81, 74, 140, 146, 93, 124, 147, 8, 137, 10, 130, 113, 180, 145, 2, 9, 138, 137, 198, 127, 170, 59, 32, 165, 182, 172, 12, 140, 146, 104, 55, 0, 121, 11, 185, 88, 53, 100, 89, 194, 46, 155, 47, 20, 141, 148, 88, 13, 137,

Expected 23, 152, 195, 2, 93, 96, 27, 61, 152, 130, 65, 91, 118, 158, 167, 142, 69, 173, 176, 175, 197, 94, 65, 114, 84, 185, 66, 4, 57, 2, 125, 156, 85, 159, 54, 176, 7, 173, 75, 106, 63, 121, 39, 115, 117, 59, 41, 29, 99, 111, 122, 95, 184, 79, 159, 109, 110, 187, 196, 119, 135, 115, 34, 131, 75, 102, 57, 133, 109, 100, 10, 37, 96, 89, 158, 194, 3, 178, 195, 102, 140, 173, 137, 106, 164, 188, 183, 172, 47, 179, 164, 189, 160, 171, 75, 112, 50, 165, 173, 136, 73, 58, 117, 25, 138, 123, 153, 98, 57, 61, 157, 129, 10, 175, | 98, 57, 61, 157, 129, 10, 175, 172, 111, 122, 151, 137, 102, 158, 25, 138, 40, 116, 17, 39, 146, 17, 156, 106, 57, 66, 162, 175, 131, 31, 63, 93, 74, | 162, 175, 131, 31, 63, 93, 74, 29, 18, 14, 76, 171, 13, 124, 22, 112, 70, 108, 91, 91, 109, 159, 175, 82, 167, 142, 81, 95, 98, 135, 16, 192, 99, 182, 77, 30, 69, 125, 82, 65, 66, 142, 169, 137, 142, 56, 64, 184, 50, 9, 27, 142, 135, 107, 11, 77, 171, 26, 158, 158, 9, 116, 110, 51, 124, 162, 150, 71, 20, 63, 27, 11, 125, 46, 63, 171, 67, 177, 140, 56, 163, 143, 191, 55, 190, 37, 171, 74, 183, 49, 175, 157,

23, 152, 195, 2, 93, 96, 27, 61, 152, 130, 65, 91, 118, 158, 167, 142, 69, 173, 176, 175, 197, 94, 65, 114, 84, 185, 66, 4, 57, 2, 125, 156, 85, 159, 54, 176, 7, 173, 75, 106, 63, 121, 39, 115, 117, 59, 41, 29, 99, 111, 122, 95, 184, 79, 159, 109, 110, 187, 196, 119, 135, 115, 34, 131, 75, 102, 57, 133, 109, 100, 10, 37, 96, 89, 158, 194, 3, 178, 195, 102, 140, 173, 137, 106, 164, 188, 183, 172, 47, 179, 164, 189, 160, 171, 75, 112, 50, 165, 173, 136, 73, 58, 117, 25, 138, 123, 153, 172, 111, 122, 151, 137, 102, 158, 25, 138, 40, 116, 17, 39, 146, 17, 156, 106, 57, 66, 29, 18, 14, 76, 171, 13, 124, 22, 112, 70, 108, 91, 91, 109, 159, 175, 82, 167, 142, 81, 95, 98, 135, 16, 192, 99, 182, 77, 30, 69, 125, 82, 65, 66, 142, 169, 137, 142, 56, 64, 184, 50, 9, 27, 142, 135, 107, 11, 77, 171, 26, 158, 158, 9, 116, 110, 51, 124, 162, 150, 71, 20, 63, 27, 11, 125, 46, 63, 171, 67, 177, 140, 56, 163, 143, 191, 55, 190, 37, 171, 74, 183, 49, 175, 157, 183, 74, 114, 75, 30, 100, 95, | 183, 74, 114, 75, 30, 100, 95,

Got

Test 36, 133, 37, 138, 107, 174, 178, 44, 131, 69, 124, 85, 88, 133, 92, 66, 113, 93, 105, 39, 54, 167, 98, 151, 90, 191, 195, 3, 107, 16, 130, 133, 152, 152, 57, 104, 10, 199, 25, 64, 158, 28, 12, 96, 137, 105, 4, 68, 149, 176, 179, 27, 84, 182, 114, 34, 98, 175, 46, 165, 7, 18, 159, 198, 101, 30, 11, 155, 168, 133, 99, 124, 132, 152, 68, 74, 123, 76, 17, 14, 182, 11, 7, 113, 91, 77, 65, 111, 81, 113, 197, 82, 144, 71, 126, 68, 124, 176, 172, 197, 124, 40, 193, 78, 149, 34, 76, 68, 29, 60, 108, 98, 29, 69, 173, 144, 158, 109, 175, 40, 167, 44, 120, 163, 117, 30, 94, 23, 117, 156, 162, 188, 190, 198, 161, 47, 3, 25, 165, 78, 7, 187, 187, 78, 33, 15, 174, 57, 34, 45, 100, 76, 77, 136, 103, 136, 135, 95, 55, 38, 167, 100, 118, 105, 127, 33, 125, 191, 139, 77, 45, 160, 122, 161, 64, 18, 27, 7, 152, 140, 114, 165, 160, 146, 19, 118, 51, 81, 149, 74, 1, 99, 187, 64, 161, 116, 95, 113, 139, 6, 32, 198, 181, 154, 142, 164, 145, 120, 67, 167, 5, 1, 132, 157, 11, 115, 128, 181, 114, 165, 80, 160, 125, 188, 144, 134, 194, 37, 165, 180, 157, 123, 40, 61, 182, 19, 10, 158, 40, 55, 0, 78, 140, 168, 161, 126, 37, 183, 60, 46, 93, 141, 160, 184, 113, 162, 199, 192, 0, 139, 50, 196, 98, 111, 19, 97, 174, 37, 79, 119, 188, 94, 98, 85, 52, 88, 16, 183, 191, 86, 65, 23, 109, 186, 124, 27, 22, 12, 167, 110, 13, 48, 134, 128, 113, 75, 178, 170, 198, 142, 36, 93, 125, 182, 58, 59, 47, 130, 153, 121, 23, 31, 181, 122, 192, 58, 52, 111, 140, 68, 57, 126, 16, 106, 144, 57, 84, 157, 85, 33, 79, 118, 18, 114, 90, 199, 96, 168, 84, 183, 38, 74, 182, 196, 104, 15, 192, 101, 98, 38, 156, 192, 133, 170, 72, 178, 112, 142, 130, 133, 131, 5, 56, 7, 160, 85, 21, 193, 92, 173, 67, 148, 68, 92, 85, 91, 187, 164, 3, 85, 51, 88, 20, 121, 50, 169, 31, 16, 111, 119, 195, 53, 165, 198, 184, 168, 111, 63, 117, 83, 44,

Expected 106, 85, 35, 156, 149, 114, 14, 7, 81, 180, 134, 130, 10, 120, 71, 62, 158, 187, 78, 95, 154, 161, 35, 199, 196, 141, 81, 149, 64, 145, 132, 119, 39, 49, 74, 197, 54, 163, 165, 144, 163, 129, 184, 27, 28, 3, 176, 177, 27, 54, 101, 31, 29, | 176, 177, 27, 54, 101, 31, 29,130, 129, 19, 91, 123, 176, 78, 51, 101, 89, 126, 55, 117, | 78, 51, 101, 89, 126, 55, 117,52, 54, 101, 30, 4, 146, 57, 10, 23, 166, 56, 26, 67, 102, 22, 175, 115, 108, 139, 121, 131, 189, 42, 184, 176, 77, 194, 66, 91, 12, 16, 116, 184, 194, 66, 91, 12, 16, 116, 184, 144, 36, 180, 194, 13, 155, 174, 186, 99, 109, 78, 111, 0, 16, 150, 72, 29, 61, 168, 168, 156, 33, 6, 41, 34, 94, 111, 84, 138, 107, 93, 191, 163, 66, 117, 24, 42, 97, 95, 17, 83, 131, 79, 29, 60, 31, 170, 163, 114, 1, 5, 88, 129, 192, 51, 97, 182, 144, 45, 2, 55, 24, 111, 0, 181, 63, 9, 174, 88, 171, 163, 70, 124, 34, 124, 69, 132, 140, 45, 52, 156, 33, 73, 101, 146, 103, ...snip... 103, 146, 101, 73, 33, 156, 52, 45, 140, 132, 69, 124, 34, 124, 70, 163, 171, 88, 174, 9, 63, 181, 0, 111, 24, 55, 2, 45, 144, 182, 97, 51, 192, 129, 88, 5, 1, 114, 163, 170, 31, 60, 29, 79, 131, | 163, 170, 31, 60, 29, 79, 131, 83, 17, 95, 97, 42, 24, 117,

106, 85, 35, 156, 149, 114, 14, 7, 81, 180, 134, 130, 10, 120, 71, 62, 158, 187, 78, 95, 154, 161, 35, 199, 196, 141, 81, 149, 64, 145, 132, 119, 39, 49, 74, 197, 54, 163, 165, 144, 163, 129, 184, 27, 28, 3, 130, 129, 19, 91, 123, 176, 52, 54, 101, 30, 4, 146, 57, 10, 23, 166, 56, 26, 67, 102, 22, 175, 115, 108, 139, 121, 131, 189, 42, 184, 176, 77, 144, 36, 180, 194, 13, 155, 174, 186, 99, 109, 78, 111, 0, 16, 150, 72, 29, 61, 168, 168, 156, 33, 6, 41, 34, 94, 111, 84, 138, 107, 93, 191, 163, 66, 117, 24, 42, 97, 95, 17, 83, 131, 79, 29, 60, 31, 170, 163, 114, 1, 5, 88, 129, 192, 51, 97, 182, 144, 45, 2, 55, 24, 111, 0, 181, 63, 9, 174, 88, 171, 163, 70, 124, 34, 124, 69, 132, 140, 45, 52, 156, 33, 73, 101, 146, 103, ...snip... 103, 146, 101, 73, 33, 156, 52, 45, 140, 132, 69, 124, 34, 124, 70, 163, 171, 88, 174, 9, 63, 181, 0, 111, 24, 55, 2, 45, 144, 182, 97, 51, 192, 129, 88, 5, 1, 114, 83, 17, 95, 97, 42, 24, 117,

Test	Expected	Got	
65, 20, 92, 94, 135, 178, 133, 141, 163, 75, 128,	66, 163, 191, 93, 107, 138,	66, 163, 191, 93, 107, 138,	
82, 51, 150, 23, 120, 44, 188, 187, 93, 37, 63, 99,	84, 111, 94, 34, 41, 6, 33,	84, 111, 94, 34, 41, 6, 33,	
58, 53, 1, 80, 191, 174, 146, 126, 11, 196, 111,	156, 168, 168, 61, 29, 72,	156, 168, 168, 61, 29, 72,	
126, 162, 169, 175, 74, 168, 99, 103, 136, 28, 97,	150, 16, 0, 111, 78, 109, 99,	150, 16, 0, 111, 78, 109, 99,	
64, 74, 81, 10, 87, 117, 41, 54, 110, 193, 43, 137,	186, 174, 155, 13, 194, 180,	186, 174, 155, 13, 194, 180,	
26, 8, 159, 29, 77, 115, 7, 110, 60, 81, 0, 148,	36, 144, 184, 116, 16, 12, 91,	36, 144, 184, 116, 16, 12, 91,	
187, 137, 193, 189, 95, 35, 172, 42, 12, 18, 58,	66, 194, 77, 176, 184, 42,	66, 194, 77, 176, 184, 42,	
11, 56, 180, 188, 44, 16, 125, 39, 146, 195, 72,	189, 131, 121, 139, 108, 115,	189, 131, 121, 139, 108, 115,	
120, 113, 172, 176, 72, 16, 3, 46, 41, 64, 125,	175, 22, 102, 67, 26, 56, 166,	175, 22, 102, 67, 26, 56, 166,	
180, 98, 144, 147, 1, 104, 76, 41, 166, 38, 151,	23, 10, 57, 146, 4, 30, 101,	23, 10, 57, 146, 4, 30, 101,	
72, 41, 69, 87, 126, 87, 23, 72, 92, 112, 49, 92,	54, 52, 117, 55, 126, 89, 101,	54, 52, 117, 55, 126, 89, 101,	
64, 109, 104, 17, 124, 93, 125, 19, 167, 97, 123};	51, 78, 176, 123, 91, 19, 129,	51, 78, 176, 123, 91, 19, 129,	
LLNode* head = LLNode::createWithIterators(arr, arr	130, 29, 31, 101, 54, 27, 177,	130, 29, 31, 101, 54, 27, 177,	
<pre>+ sizeof(arr) / sizeof(int));</pre>	176, 3, 28, 27, 184, 129, 163,	176, 3, 28, 27, 184, 129, 163,	
<pre>LLNode::printList(head);</pre>	144, 165, 163, 54, 197, 74,	144, 165, 163, 54, 197, 74,	
cout << "\n";	49, 39, 119, 132, 145, 64,	49, 39, 119, 132, 145, 64,	
<pre>LLNode* newhead = reverseLinkedList(head);</pre>	149, 81, 141, 196, 199, 35,	149, 81, 141, 196, 199, 35,	
<pre>LLNode::printList(newhead);</pre>	161, 154, 95, 78, 187, 158,	161, 154, 95, 78, 187, 158,	
<pre>newhead->clear();</pre>	62, 71, 120, 10, 130, 134,	62, 71, 120, 10, 130, 134,	
	180, 81, 7, 14, 114, 149, 156,	180, 81, 7, 14, 114, 149, 156,	
	35, 85, 106, 95, 100, 30, 75,	35, 85, 106, 95, 100, 30, 75,	
	114, 74, 183, 157, 175, 49,	114, 74, 183, 157, 175, 49,	
	183, 74, 171, 37, 190, 55,	183, 74, 171, 37, 190, 55,	
	191, 143, 163, 56, 140, 177,	191, 143, 163, 56, 140, 177,	
	67, 171, 63, 46, 125, 11, 27,	67, 171, 63, 46, 125, 11, 27,	
	63, 20, 71, 150, 162, 124, 51,	63, 20, 71, 150, 162, 124, 51,	
	110, 116, 9, 158, 158, 26,	110, 116, 9, 158, 158, 26,	
	171, 77, 11, 107, 135, 142,	171, 77, 11, 107, 135, 142,	
	27, 9, 50, 184, 64, 56, 142,	27, 9, 50, 184, 64, 56, 142,	
	137, 169, 142, 66, 65, 82,	137, 169, 142, 66, 65, 82,	
	125, 69, 30, 77, 182, 99, 192,	125, 69, 30, 77, 182, 99, 192,	
	16, 135, 98, 95, 81, 142, 167,	16, 135, 98, 95, 81, 142, 167,	
	82, 175, 159, 109, 91, 91,	82, 175, 159, 109, 91, 91,	
	108, 70, 112, 22, 124, 13,	108, 70, 112, 22, 124, 13,	
	171, 76, 14, 18, 29, 74, 93,	171, 76, 14, 18, 29, 74, 93,	
	63, 31, 131, 175, 162, 66, 57,	63, 31, 131, 175, 162, 66, 57,	

Test	Expected	Got	
	106, 156, 17, 146, 39, 17,	106, 156, 17, 146, 39, 17,	
	116, 40, 138, 25, 158, 102,	116, 40, 138, 25, 158, 102,	
	137, 151, 122, 111, 172, 175,	137, 151, 122, 111, 172, 175,	
	10, 129, 157, 61, 57, 98, 153,	10, 129, 157, 61, 57, 98, 153,	
	123, 138, 25, 117, 58, 73,	123, 138, 25, 117, 58, 73,	
	136, 173, 165, 50, 112, 75,	136, 173, 165, 50, 112, 75,	
	171, 160, 189, 164, 179, 47,	171, 160, 189, 164, 179, 47,	
	172, 183, 188, 164, 106, 137,	172, 183, 188, 164, 106, 137,	
	173, 140, 102, 195, 178, 3,	173, 140, 102, 195, 178, 3,	
	194, 158, 89, 96, 37, 10, 100,	194, 158, 89, 96, 37, 10, 100,	
	109, 133, 57, 102, 75, 131,	109, 133, 57, 102, 75, 131,	
	34, 115, 135, 119, 196, 187,	34, 115, 135, 119, 196, 187,	
	110, 109, 159, 79, 184, 95,	110, 109, 159, 79, 184, 95,	
	122, 111, 99, 29, 41, 59, 117,	122, 111, 99, 29, 41, 59, 117,	
	115, 39, 121, 63, 106, 75,	115, 39, 121, 63, 106, 75,	
	173, 7, 176, 54, 159, 85, 156,	173, 7, 176, 54, 159, 85, 156,	
	125, 2, 57, 4, 66, 185, 84,	125, 2, 57, 4, 66, 185, 84,	
	114, 65, 94, 197, 175, 176,	114, 65, 94, 197, 175, 176,	
	173, 69, 142, 167, 158, 118,	173, 69, 142, 167, 158, 118,	
	91, 65, 130, 152, 61, 27, 96,	91, 65, 130, 152, 61, 27, 96,	
	93, 2, 195, 152, 23, 162, 115,	93, 2, 195, 152, 23, 162, 115,	
	127, 78, 198, 183, 28, 151,	127, 78, 198, 183, 28, 151,	
	18, 28, 138, 178, 57, 123,	18, 28, 138, 178, 57, 123,	
	135, 52, 31, 100, 4, 86, 133,	135, 52, 31, 100, 4, 86, 133,	
	183, 149, 187, 168, 104, 28,	183, 149, 187, 168, 104, 28,	
	64, 26, 193, 145, 80, 53, 125,	64, 26, 193, 145, 80, 53, 125,	
	116, 79, 197, 195, 93, 144,	116, 79, 197, 195, 93, 144,	
	13, 65, 19, 177, 61, 122, 20,	13, 65, 19, 177, 61, 122, 20,	
	199, 50, 57, 93, 4, 158, 175,	199, 50, 57, 93, 4, 158, 175,	
	99, 9, 146, 66, 160, 81, 8,	99, 9, 146, 66, 160, 81, 8,	
	160, 57, 130, 134, 139, 135,	160, 57, 130, 134, 139, 135,	
	74, 112, 189, 108, 48, 52,	74, 112, 189, 108, 48, 52,	
	183, 17, 33, 187, 77, 110,	183, 17, 33, 187, 77, 110,	
	173, 46, 150, 57, 186, 32, 1,	173, 46, 150, 57, 186, 32, 1,	
	82, 40, 147, 2, 189, 70, 21,	82, 40, 147, 2, 189, 70, 21,	
	55, 97, 164, 196, 124, 185,	55, 97, 164, 196, 124, 185,	
			ı I.

Test	Expected	Got
	144, 63, 30, 89, 157, 150, 79,	144, 63, 30, 89, 157, 150, 79,
	76, 58, 180, 134, 171, 56, 28,	76, 58, 180, 134, 171, 56, 28,
	42, 167, 79, 130, 63, 58, 154,	42, 167, 79, 130, 63, 58, 154,
	116, 88, 115, 89, 48, 174, 89,	116, 88, 115, 89, 48, 174, 89,
	86, 31, 145, 138, 170, 114,	86, 31, 145, 138, 170, 114,
	86, 4, 121, 115, 176, 83, 124,	86, 4, 121, 115, 176, 83, 124,
	95, 74, 20, 111, 35, 125, 129,	95, 74, 20, 111, 35, 125, 129,
	195, 109, 198, 173, 6, 60,	195, 109, 198, 173, 6, 60,
	155, 74, 160, 49, 190, 113,	155, 74, 160, 49, 190, 113,
	15, 55, 185, 34, 127, 42, 35,	15, 55, 185, 34, 127, 42, 35,
	109, 67, 52, 19, 159, 7, 133,	109, 67, 52, 19, 159, 7, 133,
	124, 32, 50, 163, 48, 85, 111,	124, 32, 50, 163, 48, 85, 111,
	199, 88, 57, 163, 147, 164,	199, 88, 57, 163, 147, 164,
	137, 77, 33, 79, 33, 25, 117,	137, 77, 33, 79, 33, 25, 117,
	21, 184, 158, 70, 128, 75,	21, 184, 158, 70, 128, 75,
	106, 128, 112, 128, 11, 5,	106, 128, 112, 128, 11, 5,
	114, 97, 33, 109, 147, 180, 1,	114, 97, 33, 109, 147, 180, 1,
	179, 21, 128, 147, 41, 162,	179, 21, 128, 147, 41, 162,
	82, 126, 15, 96, 136, 99, 24,	82, 126, 15, 96, 136, 99, 24,
	189, 102, 9, 30, 123, 199, 32,	189, 102, 9, 30, 123, 199, 32,
	135, 14, 182, 9, 135, 52, 61,	135, 14, 182, 9, 135, 52, 61,
	4, 23, 85, 29, 10, 70, 61,	4, 23, 85, 29, 10, 70, 61,
	192, 125, 199, 22, 51, 29, 91,	192, 125, 199, 22, 51, 29, 91,
	98, 159, 5, 177, 176, 170,	98, 159, 5, 177, 176, 170,
	119, 66, 21, 129, 156, 130,	119, 66, 21, 129, 156, 130,
	78, 152, 103, 91, 51, 157,	78, 152, 103, 91, 51, 157,
	155, 27, 15, 154, 146, 106, 7,	155, 27, 15, 154, 146, 106, 7,
	170, 81, 141, 39, 29, 73, 70,	170, 81, 141, 39, 29, 73, 70,
	188, 62, 160, 7, 166, 77, 96,	188, 62, 160, 7, 166, 77, 96,
	35, 125, 33, 166, 95, 111, 40,	35, 125, 33, 166, 95, 111, 40,
	30, 186, 31, 33, 94, 129, 48,	30, 186, 31, 33, 94, 129, 48,
	105, 114, 198, 171, 141, 79,	105, 114, 198, 171, 141, 79,
	113, 134, 0, 42, 135, 39, 21,	113, 134, 0, 42, 135, 39, 21,
	130, 106, 96, 111, 179, 104,	130, 106, 96, 111, 179, 104,
	52, 94, 38, 9, 178, 180, 127,	52, 94, 38, 9, 178, 180, 127,
	11, 87, 65, 45, 104, 49, 44,	11, 87, 65, 45, 104, 49, 44,

Test	Expected	Got
	120, 170, 138, 3, 103, 93, 19,	120, 170, 138, 3, 103, 93, 19,
	84, 88, 118, 98, 36, 28, 194,	84, 88, 118, 98, 36, 28, 194,
	166, 199, 74, 186, 121, 90,	166, 199, 74, 186, 121, 90,
	28, 77, 70, 13, 192, 102, 188,	28, 77, 70, 13, 192, 102, 188,
	173, 81, 16, 146, 97, 70, 23,	173, 81, 16, 146, 97, 70, 23,
	164, 170, 49, 48, 61, 40, 195,	164, 170, 49, 48, 61, 40, 195,
	59, 190, 122, 118, 120, 191,	59, 190, 122, 118, 120, 191,
	39, 84, 104, 93, 179, 40, 69,	39, 84, 104, 93, 179, 40, 69,
	100, 147, 59, 140, 77, 36, 88,	100, 147, 59, 140, 77, 36, 88,
	97, 18, 160, 66, 4, 48, 115,	97, 18, 160, 66, 4, 48, 115,
	197, 146, 53, 29, 11, 47, 43,	197, 146, 53, 29, 11, 47, 43,
	185, 49, 59, 84, 61, 82, 58,	185, 49, 59, 84, 61, 82, 58,
	39, 74, 194, 112, 171, 30,	39, 74, 194, 112, 171, 30,
	126, 116, 35, 119, 4, 4, 73,	126, 116, 35, 119, 4, 4, 73,
	171, 78, 1, 31, 126, 75, 148,	171, 78, 1, 31, 126, 75, 148,
	10, 115, 152, 145, 128, 15,	10, 115, 152, 145, 128, 15,
	179, 51, 181, 34, 98, 64, 0,	179, 51, 181, 34, 98, 64, 0,
	143, 162, 198, 180, 141, 59,	143, 162, 198, 180, 141, 59,
	134, 21, 38, 115, 120, 73, 32,	134, 21, 38, 115, 120, 73, 32,
	72, 119, 24, 179, 27, 5, 173,	72, 119, 24, 179, 27, 5, 173,
	98, 98, 162, 22, 21, 86, 161]	98, 98, 162, 22, 21, 86, 161]

	Test	Expected	Got	
~	int arr[] = {68, 67, 36, 184, 137, 30, 103, 195,	[68, 67, 36, 184, 137, 30,	[68, 67, 36, 184, 137, 30,	~
	31, 125, 116, 61, 46, 46, 145, 99, 4, 117, 183, 27,	103, 195, 31, 125, 116, 61,	103, 195, 31, 125, 116, 61,	
	173, 49, 116, 20, 178, 55, 14, 99, 167, 88, 89,	46, 46, 145, 99, 4, 117, 183,	46, 46, 145, 99, 4, 117, 183,	
	100, 162, 79, 59, 117, 72, 61, 149, 193, 146, 24,	27, 173, 49, 116, 20, 178, 55,	27, 173, 49, 116, 20, 178, 55,	
	172, 148, 25, 121, 98, 58, 85, 86, 199, 45, 180,	14, 99, 167, 88, 89, 100, 162,	14, 99, 167, 88, 89, 100, 162,	
	24, 67, 167, 121, 13, 88, 116, 99, 96, 188, 147,	79, 59, 117, 72, 61, 149, 193,	79, 59, 117, 72, 61, 149, 193,	
	152, 23, 37, 15, 10, 13, 160, 89, 184, 57, 67, 89,	146, 24, 172, 148, 25, 121,	146, 24, 172, 148, 25, 121,	
	40, 24, 81, 117, 28, 63, 158, 168, 10, 115, 172,	98, 58, 85, 86, 199, 45, 180,	98, 58, 85, 86, 199, 45, 180,	
	78, 136, 60, 149, 7, 192, 63, 66, 179, 64, 155,	24, 67, 167, 121, 13, 88, 116,	24, 67, 167, 121, 13, 88, 116,	
	131, 125, 54, 62, 96, 99, 98, 33, 175, 148, 156,	99, 96, 188, 147, 152, 23, 37,	99, 96, 188, 147, 152, 23, 37,	
	193, 167, 115, 199, 96, 77, 68, 174, 83, 173, 180,	15, 10, 13, 160, 89, 184, 57,	15, 10, 13, 160, 89, 184, 57,	
	71, 45, 147, 173, 125, 197, 130, 162, 50, 147, 53,	67, 89, 40, 24, 81, 117, 28,	67, 89, 40, 24, 81, 117, 28,	
	144, 188, 184, 52, 190, 199, 70, 25, 167, 76, 70,	63, 158, 168, 10, 115, 172,	63, 158, 168, 10, 115, 172,	
	132, 85, 169, 145, 60, 88, 128, 89, 119, 55, 100,	78, 136, 60, 149, 7, 192, 63,	78, 136, 60, 149, 7, 192, 63,	
	129, 155, 158, 98, 2, 125, 192, 53, 151, 99, 199,	66, 179, 64, 155, 131, 125,	66, 179, 64, 155, 131, 125,	
	4, 155, 93, 27, 95, 106, 65, 23, 88, 189, 88, 114,	54, 62, 96, 99, 98, 33, 175,	54, 62, 96, 99, 98, 33, 175,	
	127, 90, 98, 116, 137, 156, 25, 143, 65, 190, 197,	148, 156, 193, 167, 115, 199,	148, 156, 193, 167, 115, 199,	
	177, 15, 14, 131, 151, 81, 104, 84, 67, 111, 183,	96, 77, 68, 174, 83, 173, 180,	96, 77, 68, 174, 83, 173, 180,	
	155, 193, 187, 59, 63, 7, 185, 56, 50, 115, 163,	71, 45, 147, 173, 125, 197,	71, 45, 147, 173, 125, 197,	
	92, 169, 113, 48, 107, 13, 141, 62, 22, 17, 190,	130, 162, 50, 147, 53, 144,	130, 162, 50, 147, 53, 144,	
	197, 137, 132, 12, 38, 124, 49, 28, 92, 109, 110,	188, 184, 52, 190, 199, 70,	188, 184, 52, 190, 199, 70,	
	33, 106, 131, 75, 77, 110, 38, 3, 24, 92, 125, 103,	25, 167, 76, 70, 132, 85, 169,	25, 167, 76, 70, 132, 85, 169,	
	111, 149, 0, 73, 73, 153, 0, 14, 94, 139, 139, 48,	145, 60, 88, 128, 89, 119, 55,	145, 60, 88, 128, 89, 119, 55,	
	10, 21, 12, 51, 1, 108, 35, 134, 178, 44, 73, 172,	100, 129, 155, 158, 98, 2,	100, 129, 155, 158, 98, 2,	
	169, 15, 71, 172, 168, 26, 15, 117, 85, 41, 122,	125, 192, 53, 151, 99, 199, 4,	125, 192, 53, 151, 99, 199, 4,	
	198, 82, 60, 147, 5, 97, 49, 189, 135, 198, 53, 17,	155, 93, 27, 95, 106, 65, 23,	155, 93, 27, 95, 106, 65, 23,	
	64, 82, 165, 2, 170, 53, 186, 149, 19, 28, 196,	88, 189, 88, 114, 127, 90, 98,	88, 189, 88, 114, 127, 90, 98,	
	154, 10, 163, 6, 136, 147, 52, 171, 161, 52, 137,	116, 137, 156, 25, 143, 65,	116, 137, 156, 25, 143, 65,	
	102, 73, 62, 142, 48, 149, 152, 123, 22, 137, 184,	190, 197, 177, 15, 14, 131,	190, 197, 177, 15, 14, 131,	
	41, 17, 179, 68, 106, 115, 174, 160, 133, 198, 153,	151, 81, 104, 84, 67, 111,	151, 81, 104, 84, 67, 111,	
	48, 18, 63, 178, 17, 132, 163, 37, 99, 133, 88, 33,	183, 155, 193, 187, 59, 63, 7,	183, 155, 193, 187, 59, 63, 7,	
	73, 118, 167, 188, 28, 87, 177, 54, 165, 19, 160,	185, 56, 50, 115, 163, 92,	185, 56, 50, 115, 163, 92,	
	68, 10, 176, 71, 46, 163, 46, 4, 99, 117, 101, 61,	169, 113, 48, 107, 13, 141,	169, 113, 48, 107, 13, 141,	
	11, 134, 156, 17, 134, 10, 119, 161, 99, 118, 185,	62, 22, 17, 190, 197, 137,	62, 22, 17, 190, 197, 137,	
	47, 35, 99, 18, 125, 95, 5, 35, 0, 71, 85, 24, 94,	132, 12, 38, 124, 49, 28, 92,	132, 12, 38, 124, 49, 28, 92,	
	44, 115, 28, 15, 24, 16, 163, 89, 125, 163, 28,	109, 110, 33, 106, 131, 75,	109, 110, 33, 106, 131, 75,	

Test 150, 4, 91, 70, 153, 23, 124, 78, 110, 120, 197, 69, 74, 108, 130, 110, 91, 122, 117, 105, 49, 64, 58, 153, 174, 88, 50, 189, 33, 55, 153, 93, 185, 63, 148, 51, 128, 109, 77, 5, 54, 173, 130, 80, 152, 52, 146, 79, 65, 87, 97, 28, 95, 82, 14, 165, 33, 188, 27, 147, 40, 185, 6, 135, 59, 159, 30, 86, 111, 109, 111, 151, 22, 121, 137, 18, 24, 105, 149, 44, 160, 196, 27, 128, 89, 59, 0, 152, 192, 50, 155, 132, 51, 19, 42, 145, 18, 108, 17, 86, 21, 191, 83, 36, 71, 156, 99, 172, 9, 26, 157, 53, 2, 115, 169, 198, 46, 169, 80, 105, 132, 99, 82, 160, 68, 5, 39, 60, 192, 23, 92, 188, 139, 4, 169, 27, 32, 37, 64, 157, 60, 87, 169, 59, 118, 139, 28, 117, 78, 69, 174, 160, 4, 63, 23, 144, 122, 175, 91, 184, 149, 182, 81, 55, 72, 146, 64, 61, 17, 158, 48, 110, 120, 48, 8, 22, 189, 164, 12, 94, 57, 199, 185, 126, 176, 199, 100, 84, 174, 145, 111, 132, 40, 130, 38, 136, 92, 98, 186, 81, 83, 6, 75, 159, 61, 45, 147, 77, 166, 182, 192, 193, 152, 184, 42, 51, 129, 193, 167, 99, 174, 11, 3, 24, 57, 12, 124, 174, 63, 125, 133, 176, 28, 173, 0, 23, 19, 135, 114, 33, 17, 89, 186, 133, 26, 190, 122, 158, 150, 71, 185, 142, 109, 85, 119, 157, 104, 2, 139, 170, 146, 169, 130, 137, 103, 11, 185, 46, 91, 20, 125, 105, 86, 109, 40, 59, 167, 75, 191, 176, 7, 119, 145, 148, 184, 64, 35, 67, 101, 110, 114, 180, 196, 96, 17, 165, 193, 8, 92, 61, 100, 53, 179, 150, 62, 98, 107, 74, 96, 5, 97, 144, 149, 91, 185, 14, 41, 122, 142, 97, 41, 7, 155, 51, 93, 112, 121, 36, 68, 53, 90, 60, 198, 171, 29, 32, 112, 16, 75, 171, 92, 134, 82, 39, 199, 138, 103, 92, 111, 52, 58, 32, 132, 68, 100, 87, 149, 179, 60, 29, 143, 160, 82, 122, 66, 20, 52, 86, 149, 16, 136, 165, 131, 93, 0, 180, 157, 12, 172, 93, 122, 199, 45, 95, 156, 31, 94, 186, 5, 136, 32, 169, 42, 114, 174, 88, 79, 170, 38, 160, 195, 120, 185, 65, 14,

Expected 77, 110, 38, 3, 24, 92, 125, 103, 111, 149, 0, 73, 73, 153, | 103, 111, 149, 0, 73, 73, 153, 0, 14, 94, 139, 139, 48, 10, 21, 12, 51, 1, 108, 35, 134, 178, 44, 73, 172, 169, 15, 71, | 178, 44, 73, 172, 169, 15, 71,172, 168, 26, 15, 117, 85, 41, 122, 198, 82, 60, 147, 5, 97, 49, 189, 135, 198, 53, 17, 64, 82, 165, 2, 170, 53, 186, 149, 19, 28, 196, 154, 10, 163, 6, 136, 147, 52, 171, 161, 52, 137, 102, 73, 62, 142, 48, 149, 152, 123, 22, 137, 184, 41, 17, 179, 68, 106, 115, 174, 160, 133, 198, 153, 48, 18, 63, 178, 17, 132, 163, 37, 18, 63, 178, 17, 132, 163, 37, 99, 133, 88, 33, 73, 118, 167, 188, 28, 87, 177, 54, 165, 19, 160, 68, 10, 176, 71, 46, 163, 160, 68, 10, 176, 71, 46, 163, 46, 4, 99, 117, 101, 61, 11, 134, 156, 17, 134, 10, 119, 161, 99, 118, 185, 47, 35, 99, 161, 99, 118, 185, 47, 35, 99, 18, 125, 95, 5, 35, 0, 71, 85, | 18, 125, 95, 5, 35, 0, 71, 85,24, 94, 44, 115, 28, 15, 24, 16, 163, 89, 125, 163, 28, 150, 4, 91, 70, 153, 23, 124, 78, 110, 120, 197, 69, 74, 108, 130, 110, 91, 122, 117, 105, 49, 64, 58, 153, 174, 88, 50, 189, 33, 55, 153, 93, 185, 63, 148, 51, 128, 109, 77, 5, 54, 173, 130, 80, 152, 52, 146, 79, 65, 87, 97, 28, 95, 82, 14, 165, 33, 188, 27, 147, 40, 185, 6, 135, 59, 159, 30, 86, 111, 109, 111, 151, 22,

Got 77, 110, 38, 3, 24, 92, 125, 0, 14, 94, 139, 139, 48, 10, 21, 12, 51, 1, 108, 35, 134, 172, 168, 26, 15, 117, 85, 41, 122, 198, 82, 60, 147, 5, 97, 49, 189, 135, 198, 53, 17, 64, 82, 165, 2, 170, 53, 186, 149, 19, 28, 196, 154, 10, 163, 6, 136, 147, 52, 171, 161, 52, 137, 102, 73, 62, 142, 48, 149, 152, 123, 22, 137, 184, 41, 17, 179, 68, 106, 115, 174, 160, 133, 198, 153, 48, 99, 133, 88, 33, 73, 118, 167, 188, 28, 87, 177, 54, 165, 19, 46, 4, 99, 117, 101, 61, 11, 134, 156, 17, 134, 10, 119, 24, 94, 44, 115, 28, 15, 24, 16, 163, 89, 125, 163, 28, 150, 4, 91, 70, 153, 23, 124, 78, 110, 120, 197, 69, 74, 108, 130, 110, 91, 122, 117, 105, 49, 64, 58, 153, 174, 88, 50, 189, 33, 55, 153, 93, 185, 63, 148, 51, 128, 109, 77, 5, 54, 173, 130, 80, 152, 52, 146, 79, 65, 87, 97, 28, 95, 82, 14, 165, 33, 188, 27, 147, 40, 185, 6, 135, 59, 159, 30, 86, 111, 109, 111, 151, 22,

Got

Test 97, 132, 160, 40, 128, 0, 18, 99, 49, 159, 87, 11, 167, 49, 97, 61, 175, 158, 183, 134, 99, 108, 54, 173, 67, 67, 71, 20, 81, 119, 135, 107, 148, 6, 11, 38, 104, 131, 90, 89, 12, 106, 111, 136, 44, 181, 167, 75, 168, 46, 176, 34, 164, 134, 107, 181, 177, 141, 147, 136, 52, 107, 30, 37, 157, 174, 108, 90, 187, 13, 125, 172, 7, 13, 48, 52, 198, 177, 26, 9, 34, 56, 91, 166, 187, 130, 55, 94 ...snip..., 140, 0, 165, 198, 69, 114, 198, 102, 64, 18, 136, 191, 30, 160, 46, 144, 111, 11, 184, 36, 24, 72, 91, 192, 146, 51, 177, 153, 128, 84, 139, 147, 184, 3, 61, 76, 198, 158, 177, 90, 190, 146, 6, 66, 81, 17, 9, 131, 177, 116, 181, 50, 16, 105, 143, 144, 198, 142, 53, 25, 138, 135, 193, 30, 43, 123, 89, 117, 39, 118, 25, 86, 115, 195, 42, 18, 92, 136, 44, 96, 62, 151, 18, 168, 51, 121, 37, 147, 198, 6, 116, 10, 80, 163, 186, 54, 171, 83, 185, 8, 62, 105, 102, 99, 176, 156, 164, 87, 176, 44, 190, 110, 132, 141, 87, 172, 0, 129, 180, 35, 42, 91, 157, 164, 52, 9, 23, 101, 49, 137, 165, 31, 76, 152, 65, 151, 157, 94, 133, 40, 45, 30, 183, 167, 44, 13, 61, 79, 41, 25, 44, 190, 74, 44, 176, 40, 116, 136, 31, 138, 173, 21, 86, 137, 24, 18, 65, 84, 66, 49, 125, 119, 83, 133, 16, 138, 70, 40, 83, 138, 20, 160, 126, 142, 125, 129, 53, 156, 41, 170, 138, 109, 127, 145, 19, 6, 156, 151, 46, 153, 94, 100, 90, 155, 105, 90, 47, 111, 170, 29, 49, 163, 154, 78, 185, 138, 53, 12, 149, 98, 163, 84, 33, 78, 47, 50, 45, 118, 22, 25, 48, 93, 123, 167, 158, 84, 73, 93, 127, 190, 159, 69, 128, 68, 59, 116, 77, 137, 160, 99, 95, 16, 90, 120, 162, 125, 156, 130, 59, 185, 176, 102, 176, 58, 183, 179, 40, 138, 41, 53, 69, 95, 103, 16, 103, 163, 126, 98, 83, 21, 39, 38, 75, 192, 134, 102, 104, 74, 31, 113, 61, 55, 40, 70, 190, 119, 195, 104, 152, 118, 138, 146, 147, 194, 120, 37, 166, 194, 181, 7, 146, 149, 2, 118, 81, 9,

Expected 121, 137, 18, 24, 105, 149, 44, 160, 196, 27, 128, 89, 59, 0, 152, 192, 50, 155, 132, 51, 19, 42, 145, 18, 108, 17, 86, 21, 191, 83, 36, 71, 156, 99, 172, 9, 26, 157, 53, 2, 115, 169, 198, 46, 169, 80, 105, 132, 99, 82, 160, 68, 5, 39, 60, 192, 23, 92, 188, 139, 4, 169, 27, 32, 37, 64, 157, 60, 87, 169, 59, 118, 139, 28, 117, 78, 69, 174, 160, 4, 63, 23, 144, 122, 175, 91, 184, 149, 182, 81, 55, 72, 146, 64, 149, 182, 81, 55, 72, 146, 64, 61, 17, 158, 48, 110, 120, 48, 8, 22, 189, 164, 12, 94, 57, 199, 185, 126, 176, 199, 100, 84, 174, 145, 111, 132, 40, 130, 38, 136, 92, 98, 186, 81, | 130, 38, 136, 92, 98, 186, 81, 83, 6, 75, 159, 61, 45, 147, 77, 166, 182, 192, 193, 152, 184, 42, 51, 129, 193, 167, 99, 174, 11, 3, 24, 57, 12, 124, 174, 63, 125, 133, 176, 28, 173, 0, 23, 19, 135, 114, 33, 17, 89, 186, 133, 26, 190, 122, 158, 150, 71, 185, 142, 109, 85, 119, 157, 104, 2, 139, 170, 146, 169, 130, 137, 103, 11, 185, 46, 91, 20, 125, 105, 86, 109, 40, 59, 167, 75, 191, 176, 7, 119, 145, 148, 184, 64, 35, 67, 101, 110, 114, 180, 196, 96, 17, 165, 193, 8, 92, 61, 100, 53, 179, 150, 62, 98, 107, 74, 96, 5,

121, 137, 18, 24, 105, 149, 44, 160, 196, 27, 128, 89, 59, 0, 152, 192, 50, 155, 132, 51, 19, 42, 145, 18, 108, 17, 86, 21, 191, 83, 36, 71, 156, 99, 172, 9, 26, 157, 53, 2, 115, 169, 198, 46, 169, 80, 105, 132, 99, 82, 160, 68, 5, 39, 60, 192, 23, 92, 188, 139, 4, 169, 27, 32, 37, 64, 157, 60, 87, 169, 59, 118, 139, 28, 117, 78, 69, 174, 160, 4, 63, 23, 144, 122, 175, 91, 184, 61, 17, 158, 48, 110, 120, 48, 8, 22, 189, 164, 12, 94, 57, 199, 185, 126, 176, 199, 100, 84, 174, 145, 111, 132, 40, 83, 6, 75, 159, 61, 45, 147, 77, 166, 182, 192, 193, 152, 184, 42, 51, 129, 193, 167, 99, 174, 11, 3, 24, 57, 12, 124, 174, 63, 125, 133, 176, 28, 173, 0, 23, 19, 135, 114, 33, 17, 89, 186, 133, 26, 190, 122, 158, 150, 71, 185, 142, 109, 85, 119, 157, 104, 2, 139, 170, 146, 169, 130, 137, 103, 11, 185, 46, 91, 20, 125, 105, 86, 109, 40, 59, 167, 75, 191, 176, 7, 119, 145, 148, 184, 64, 35, 67, 101, 110, 114, 180, 196, 96, 17, 165, 193, 8, 92, 61, 100, 53, 179, 150, 62, 98, 107, 74, 96, 5,

Expected

Test 6, 182, 96, 37, 136, 135, 171, 169, 143, 106, 16, 92, 94, 117, 63, 86, 131, 101, 64, 39, 51, 4, 190, 136, 150, 116, 74, 193, 49, 170, 50, 146, 123, 102, 172, 6, 119, 139, 182, 37, 180, 114, 72, 9, 10, 35, 12, 139, 22, 38, 116, 95, 87, 166, 157, 101, 66, 88, 99, 81, 163, 196, 30, 149, 173, 161, 195, 54, 116, 141, 165, 100, 153, 117, 141, 54, 85, 81, 56, 174, 114, 100, 32, 176, 78, 11, 30, 193, 97, 12, 150, 85, 49, 73, 147, 33, 44, 181, 85, 171, 151, 70, 72, 135, 28, 99, 32, 91, 184, 120, 25, 85, 182, 192, 195, 115, 150, 67, 46, 156, 147, 0, 82, 61, 68, 19, 107, 38, 64, 43, 27, 30, 95, 22, 64, 44, 14, 102, 79, 168, 91, 24, 65, 97, 171, 169, 190, 193, 161, 36, 159, 126, 23, 19, 48, 113, 193, 26, 125, 76, 160, 50, 36, 184, 181, 4, 148, 37, 119, 155, 84, 46, 46, 104, 64, 139, 193, 16, 23, 168, 45, 161, 128, 175, 70, 197, 126, 130, 91, 94, 98, 155, 165, 98, 48, 71, 89, 97, 108, 80, 23, 181, 7, 3, 137, 112, 20, 2, 167, 173, 136, 90, 194, 160, 130, 175, 169, 183, 159, 78, 113, 93, 160, 83, 15, 141, 136, 109, 187, 52, 73, 47, 5, 26, 135, 32, 75, 10, 47, 141, 79, 71, 192, 181, 122, 57, 147, 62, 101, 121, 112, 78, 162, 42, 34, 101, 14, 185, 195, 1, 194, 134, 186, 73, 186, 90, 84, 46, 126, 163, 0, 14, 87, 31, 120, 19, 92, 118, 77, 36, 21, 138, 19, 195, 95, 123, 45, 111, 106, 198, 17, 194, 55, 142, 63, 189, 55, 102, 198, 99, 104, 150, 48, 108, 16, 196, 175, 195, 119, 12, 96, 98, 120, 27, 71, 147, 88, 1, 35, 154, 67, 37, 187, 90, 163, 21, 105, 165, 2, 14, 86, 1, 114, 81, 102, 79, 98, 7, 141, 117, 44, 190, 123, 182, 157, 132, 20, 64, 5, 11, 187, 167, 112, 118, 88, 136, 164, 19, 151, 0, 187, 65, 179, 6, 43, 148, 154, 111, 197, 119, 131, 73, 123, 1, 54, 185, 93, 156, 83, 129, 62, 161, 133, 84, 58, 144, 128, 196, 58, 95, 89, 158, 76, 88, 5, 188, 5, 80, 173, 156, 48, 85, 184, 166, 100, 176, 33, 140,

97, 144, 149, 91, 185, 14, 41, 122, 142, 97, 41, 7, 155, 51, 93, 112, 121, 36, 68, 53, 90, 60, 198, 171, 29, 32, 112, 16, 75, 171, 92, 134, 82, 39, 199, 138, 103, 92, 111, 52, 58, 32, 132, 68, 100, 87, 149, 179, 60, 29, 143, 160, 82, 122, 66, 20, 52, 86, 149, 16, 136, 165, 93, 122, 199, 45, 95, 156, 31, 94, 186, 5, 136, 32, 169, 42, 114, 174, 88, 79, 170, 38, 160, 195, 120, 185, 65, 14, 97, 132, 160, 40, 128, 0, 18, 99, 49, 159, 87, 11, 167, 49, 97, 61, 175, 158, 183, 134, 99, 108, 54, 173, 67, 67, 71, 20, 81, 119, 135, 107, 148, 6, 11, 38, 104, 131, 90, 89, 12, 106, 111, 136, 44, 181, 167, 75, 168, 46, 176, 34, 164, 134, 107, 181, 177, 141, 147, 136, 52, 107, 30, 37, 157, 174, 108, 90, 187, 13, 125, 172, 7, 13, 48, 52, 198, 177, 26, 9, 34, 56, 91, 166, 187, 130, 55, 94, 178, 10, 1 ...snip..., 10, 178, 94, 55, 130, 187, 166, 91, 56, 34, 9, 26, 177, 198, 52, 48, 13, 7, 172, 125, 13, 187, 90, 108, 174, 157, 37, 30, 107, 52, 136, 147, 141, 177, 181, 107, 134, 164, 34, 176, 46, 168, 75, 167, 181, 44, 136, 111,

Got 97, 144, 149, 91, 185, 14, 41, 122, 142, 97, 41, 7, 155, 51, 93, 112, 121, 36, 68, 53, 90, 60, 198, 171, 29, 32, 112, 16, 75, 171, 92, 134, 82, 39, 199, 138, 103, 92, 111, 52, 58, 32, 132, 68, 100, 87, 149, 179, 60, 29, 143, 160, 82, 122, 66, 20, 52, 86, 149, 16, 136, 165, 131, 93, 0, 180, 157, 12, 172, | 131, 93, 0, 180, 157, 12, 172, 93, 122, 199, 45, 95, 156, 31, 94, 186, 5, 136, 32, 169, 42, 114, 174, 88, 79, 170, 38, 160, 195, 120, 185, 65, 14, 97, 132, 160, 40, 128, 0, 18, 99, 49, 159, 87, 11, 167, 49, 97, 61, 175, 158, 183, 134, 99, 108, 54, 173, 67, 67, 71, 20, 81, 119, 135, 107, 148, 6, 11, 38, 104, 131, 90, 89, 12, 106, 111, 136, 44, 181, 167, 75, 168, 46, 176, 34, 164, 134, 107, 181, 177, 141, 147, 136, 52, 107, 30, 37, 157, 174, 108, 90, 187, 13, 125, 172, 7, 13, 48, 52, 198, 177, 26, 9, 34, 56, 91, 166, 187, 130, 55, 94, 178, 10, 1 ...snip..., 10, 178, 94, 55, 130, 187, 166, 91, 56, 34, 9, 26, 177, 198, 52, 48, 13, 7, 172, 125, 13, 187, 90, 108, 174, 157, 37, 30, 107, 52, 136, 147, 141, 177, 181, 107, 134, 164, 34, 176, 46, 168, 75, 167, 181, 44, 136, 111,

Test	Expected	Got	
Test 96, 27, 66, 69, 194, 37, 146, 107, 161, 11, 11, 150, 135, 145, 183, 135, 3, 106, 124, 34, 158, 149, 37, 134, 61, 112, 100, 54, 70, 81, 181, 141, 134, 130, 44, 30, 26, 29, 145, 2, 45, 9, 138, 158, 97, 43, 10, 195, 106, 32, 121, 111, 55, 98, 141, 93, 74, 33, 111, 105, 18, 124, 128, 86, 79, 41, 14, 75, 198, 33, 162, 171, 101, 111, 100, 132, 42, 98, 25, 98, 23, 169, 140, 109, 96, 111, 18, 81, 0, 104, 74, 37, 81, 90, 21, 166, 106, 191, 170, 44, 6, 90, 174, 44, 195, 88, 154, 64, 112, 33, 61, 141, 98, 14, 91, 59, 137, 150, 118, 114, 55, 36, 108, 83, 144}; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = reverseLinkedList(head); LLNode::printList(newhead); newhead->clear();	Expected 106, 12, 89, 90, 131, 104, 38, 11, 6, 148, 107, 135, 119, 81, 20, 71, 67, 67, 173, 54, 108, 99, 134, 183, 158, 175, 61, 97, 49, 167, 11, 87, 159, 49, 99, 18, 0, 128, 40, 160, 132, 97, 14, 65, 185, 120, 195, 160, 38, 170, 79, 88, 174, 114, 42, 169, 32, 136, 5, 186, 94, 31, 156, 95, 45, 199, 122, 93, 172, 12, 157, 180, 0, 93, 131, 165, 136, 16, 149, 86, 52, 20, 66, 122, 82, 160, 143, 29, 60, 179, 149, 87, 100, 68, 132, 32, 58, 52, 111, 92, 103, 138, 199, 39, 82, 134, 92, 171, 75, 16, 112, 32, 29, 171, 198, 60, 90, 53, 68, 36, 121, 112, 93, 51, 155, 7, 41, 97, 142, 122, 41, 14, 185, 91, 149, 144, 97, 5, 96, 74, 107, 98, 62, 150, 179, 53, 100, 61, 92, 8, 193, 165, 17, 96, 196, 180, 114, 110, 101, 67, 35, 64, 184, 148, 145, 119, 7, 176, 191, 75, 167, 59, 40, 109, 86, 105, 125, 20, 91, 46, 185, 11, 103, 137, 130, 169, 146, 170, 139, 2, 104, 157, 119, 85, 109, 142, 185, 71,	106, 12, 89, 90, 131, 104, 38, 11, 6, 148, 107, 135, 119, 81, 20, 71, 67, 67, 173, 54, 108, 99, 134, 183, 158, 175, 61, 97, 49, 167, 11, 87, 159, 49, 99, 18, 0, 128, 40, 160, 132, 97, 14, 65, 185, 120, 195, 160, 38, 170, 79, 88, 174, 114, 42, 169, 32, 136, 5, 186, 94, 31, 156, 95, 45, 199, 122, 93, 172, 12, 157, 180, 0, 93, 131, 165, 136, 16, 149, 86, 52, 20, 66, 122, 82, 160, 143, 29, 60, 179, 149, 87, 100, 68, 132, 32, 58, 52, 111, 92, 103, 138, 199, 39, 82, 134, 92, 171, 75, 16, 112, 32, 29, 171, 198, 60, 90, 53, 68, 36, 121, 112, 93, 51, 155, 7, 41, 97, 142, 122, 41, 14, 185, 91, 149, 144, 97, 5, 96, 74, 107, 98, 62, 150, 179, 53, 100, 61, 92, 8, 193, 165, 17, 96, 196, 180, 114, 110, 101, 67, 35, 64, 184, 148, 145, 119, 7, 176, 191, 75, 167, 59, 40, 109, 86, 105, 125, 20, 91, 46, 185, 11, 103, 137, 130, 169, 146, 170, 139, 2, 104, 157, 119, 85, 109, 142, 185, 71,	
	146, 170, 139, 2, 104, 157,	146, 170, 139, 2, 104, 157,	
	,,,,,,	,,,,,,	

Test	Expected	Got
	182, 166, 77, 147, 45, 61,	182, 166, 77, 147, 45, 61,
	159, 75, 6, 83, 81, 186, 98,	159, 75, 6, 83, 81, 186, 98,
	92, 136, 38, 130, 40, 132,	92, 136, 38, 130, 40, 132,
	111, 145, 174, 84, 100, 199,	111, 145, 174, 84, 100, 199,
	176, 126, 185, 199, 57, 94,	176, 126, 185, 199, 57, 94,
	12, 164, 189, 22, 8, 48, 120,	12, 164, 189, 22, 8, 48, 120,
	110, 48, 158, 17, 61, 64, 146,	110, 48, 158, 17, 61, 64, 146,
	72, 55, 81, 182, 149, 184, 91,	72, 55, 81, 182, 149, 184, 91,
	175, 122, 144, 23, 63, 4, 160,	175, 122, 144, 23, 63, 4, 160,
	174, 69, 78, 117, 28, 139,	174, 69, 78, 117, 28, 139,
	118, 59, 169, 87, 60, 157, 64,	118, 59, 169, 87, 60, 157, 64,
	37, 32, 27, 169, 4, 139, 188,	37, 32, 27, 169, 4, 139, 188,
	92, 23, 192, 60, 39, 5, 68,	92, 23, 192, 60, 39, 5, 68,
	160, 82, 99, 132, 105, 80,	160, 82, 99, 132, 105, 80,
	169, 46, 198, 169, 115, 2, 53,	169, 46, 198, 169, 115, 2, 53,
	157, 26, 9, 172, 99, 156, 71,	157, 26, 9, 172, 99, 156, 71,
	36, 83, 191, 21, 86, 17, 108,	36, 83, 191, 21, 86, 17, 108,
	18, 145, 42, 19, 51, 132, 155,	18, 145, 42, 19, 51, 132, 155,
	50, 192, 152, 0, 59, 89, 128,	50, 192, 152, 0, 59, 89, 128,
	27, 196, 160, 44, 149, 105,	27, 196, 160, 44, 149, 105,
	24, 18, 137, 121, 22, 151,	24, 18, 137, 121, 22, 151,
	111, 109, 111, 86, 30, 159,	111, 109, 111, 86, 30, 159,
	59, 135, 6, 185, 40, 147, 27,	59, 135, 6, 185, 40, 147, 27,
	188, 33, 165, 14, 82, 95, 28,	188, 33, 165, 14, 82, 95, 28,
	97, 87, 65, 79, 146, 52, 152,	97, 87, 65, 79, 146, 52, 152,
	80, 130, 173, 54, 5, 77, 109,	80, 130, 173, 54, 5, 77, 109,
	128, 51, 148, 63, 185, 93,	128, 51, 148, 63, 185, 93,
	153, 55, 33, 189, 50, 88, 174,	153, 55, 33, 189, 50, 88, 174,
	153, 58, 64, 49, 105, 117,	153, 58, 64, 49, 105, 117,
	122, 91, 110, 130, 108, 74,	122, 91, 110, 130, 108, 74,
	69, 197, 120, 110, 78, 124,	69, 197, 120, 110, 78, 124,
	23, 153, 70, 91, 4, 150, 28,	23, 153, 70, 91, 4, 150, 28,
	163, 125, 89, 163, 16, 24, 15,	163, 125, 89, 163, 16, 24, 15,
	28, 115, 44, 94, 24, 85, 71,	28, 115, 44, 94, 24, 85, 71,
	0, 35, 5, 95, 125, 18, 99, 35,	0, 35, 5, 95, 125, 18, 99, 35,
	47, 185, 118, 99, 161, 119,	47, 185, 118, 99, 161, 119,

Test	Expected	Got
	10, 134, 17, 156, 134, 11, 61,	10, 134, 17, 156, 134, 11, 61,
	101, 117, 99, 4, 46, 163, 46,	101, 117, 99, 4, 46, 163, 46,
	71, 176, 10, 68, 160, 19, 165,	71, 176, 10, 68, 160, 19, 165,
	54, 177, 87, 28, 188, 167,	54, 177, 87, 28, 188, 167,
	118, 73, 33, 88, 133, 99, 37,	118, 73, 33, 88, 133, 99, 37,
	163, 132, 17, 178, 63, 18, 48,	163, 132, 17, 178, 63, 18, 48,
	153, 198, 133, 160, 174, 115,	153, 198, 133, 160, 174, 115,
	106, 68, 179, 17, 41, 184,	106, 68, 179, 17, 41, 184,
	137, 22, 123, 152, 149, 48,	137, 22, 123, 152, 149, 48,
	142, 62, 73, 102, 137, 52,	142, 62, 73, 102, 137, 52,
	161, 171, 52, 147, 136, 6,	161, 171, 52, 147, 136, 6,
	163, 10, 154, 196, 28, 19,	163, 10, 154, 196, 28, 19,
	149, 186, 53, 170, 2, 165, 82,	149, 186, 53, 170, 2, 165, 82,
	64, 17, 53, 198, 135, 189, 49,	64, 17, 53, 198, 135, 189, 49,
	97, 5, 147, 60, 82, 198, 122,	97, 5, 147, 60, 82, 198, 122,
	41, 85, 117, 15, 26, 168, 172,	41, 85, 117, 15, 26, 168, 172,
	71, 15, 169, 172, 73, 44, 178,	71, 15, 169, 172, 73, 44, 178,
	134, 35, 108, 1, 51, 12, 21,	134, 35, 108, 1, 51, 12, 21,
	10, 48, 139, 139, 94, 14, 0,	10, 48, 139, 139, 94, 14, 0,
	153, 73, 73, 0, 149, 111, 103,	153, 73, 73, 0, 149, 111, 103,
	125, 92, 24, 3, 38, 110, 77,	125, 92, 24, 3, 38, 110, 77,
	75, 131, 106, 33, 110, 109,	75, 131, 106, 33, 110, 109,
	92, 28, 49, 124, 38, 12, 132,	92, 28, 49, 124, 38, 12, 132,
	137, 197, 190, 17, 22, 62,	137, 197, 190, 17, 22, 62,
	141, 13, 107, 48, 113, 169,	141, 13, 107, 48, 113, 169,
	92, 163, 115, 50, 56, 185, 7,	92, 163, 115, 50, 56, 185, 7,
	63, 59, 187, 193, 155, 183,	63, 59, 187, 193, 155, 183,
	111, 67, 84, 104, 81, 151,	111, 67, 84, 104, 81, 151,
	131, 14, 15, 177, 197, 190,	131, 14, 15, 177, 197, 190,
	65, 143, 25, 156, 137, 116,	65, 143, 25, 156, 137, 116,
	98, 90, 127, 114, 88, 189, 88,	98, 90, 127, 114, 88, 189, 88,
	23, 65, 106, 95, 27, 93, 155,	23, 65, 106, 95, 27, 93, 155,
	4, 199, 99, 151, 53, 192, 125,	4, 199, 99, 151, 53, 192, 125,
	2, 98, 158, 155, 129, 100, 55,	2, 98, 158, 155, 129, 100, 55,
	119, 89, 128, 88, 60, 145,	119, 89, 128, 88, 60, 145,
	169, 85, 132, 70, 76, 167, 25,	169, 85, 132, 70, 76, 167, 25,

Test	Expected	Got
	70, 199, 190, 52, 184, 188,	70, 199, 190, 52, 184, 188,
	144, 53, 147, 50, 162, 130,	144, 53, 147, 50, 162, 130,
	197, 125, 173, 147, 45, 71,	197, 125, 173, 147, 45, 71,
	180, 173, 83, 174, 68, 77, 96,	180, 173, 83, 174, 68, 77, 96,
	199, 115, 167, 193, 156, 148,	199, 115, 167, 193, 156, 148,
	175, 33, 98, 99, 96, 62, 54,	175, 33, 98, 99, 96, 62, 54,
	125, 131, 155, 64, 179, 66,	125, 131, 155, 64, 179, 66,
	63, 192, 7, 149, 60, 136, 78,	63, 192, 7, 149, 60, 136, 78,
	172, 115, 10, 168, 158, 63,	172, 115, 10, 168, 158, 63,
	28, 117, 81, 24, 40, 89, 67,	28, 117, 81, 24, 40, 89, 67,
	57, 184, 89, 160, 13, 10, 15,	57, 184, 89, 160, 13, 10, 15,
	37, 23, 152, 147, 188, 96, 99,	37, 23, 152, 147, 188, 96, 99,
	116, 88, 13, 121, 167, 67, 24,	116, 88, 13, 121, 167, 67, 24,
	180, 45, 199, 86, 85, 58, 98,	180, 45, 199, 86, 85, 58, 98,
	121, 25, 148, 172, 24, 146,	121, 25, 148, 172, 24, 146,
	193, 149, 61, 72, 117, 59, 79,	193, 149, 61, 72, 117, 59, 79,
	162, 100, 89, 88, 167, 99, 14,	162, 100, 89, 88, 167, 99, 14,
	55, 178, 20, 116, 49, 173, 27,	55, 178, 20, 116, 49, 173, 27,
	183, 117, 4, 99, 145, 46, 46,	183, 117, 4, 99, 145, 46, 46,
	61, 116, 125, 31, 195, 103,	61, 116, 125, 31, 195, 103,
	30, 137, 184, 36, 67, 68]	30, 137, 184, 36, 67, 68]

Passed all tests! ✓



Điểm cho bài nộp này: 1,00/1,00.

Câu hỏi 9

Chính xác

Điểm 1,00 của 1,00

Class LLNode representing a node of singly linked lists is declared as below:

```
class LLNode {
public:
    int val;
    LLNode* next;
    LLNode(); // Constructor: val = 0, next = nullptr
    LLNode(int val, LLNode* next); // Constructor with customized data
}
```

Given a singly linked list head node and a integer k.

Your task is to implement a function with following prototype:

```
LLNode* rotateLinkedList(LLNode* head, int k);
```

The function returns head node of the rotated singly linked list obtained after rotate the linked list to the right by k places.

Note:

- The iostream library has been used and namespace std is being used. No other libraries are allowed.
- The constructors and methods of class LLNode have been defined fully so you do not need to redefine them.
- You can write helper functions.

For example:

```
Test

int arr[] = {2, 4, 6, 6, 3};
int k = 3;
LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int));
LLNode::printList(head);
cout << "\n";
LLNode* newhead = rotateLinkedList(head, k);
LLNode::printList(newhead);</pre>
```

Answer: (penalty regime: 0 %)

Reset answer

```
LLNode *rotateLinkedList(LLNode *head, int k)
 2 ▼ {
 3
        // STUDENT ANSWER
        if (!head | | k <= 0)
 4
 5 ▼
            return head;
 6
 7
 8
        int length = 1;
 9
        LLNode *current = head;
10
        while (current->next)
11
12 ▼
            current = current->next;
13
            length++;
14
15
16
        k = k \% length;
17
18
        if (k == 0)
19
20 ▼
            return head;
21
22
```

	Test	Expected	Got	
•	<pre>int arr[] = {2, 4, 6, 6, 3}; int k = 3; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = rotateLinkedList(head, k); LLNode::printList(newhead);</pre>	[2, 4, 6, 6, 3] [6, 6, 3, 2, 4]	[2, 4, 6, 6, 3] [6, 6, 3, 2, 4]	*
•	<pre>int arr[] = {}; int k = 2; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = rotateLinkedList(head, k); LLNode::printList(newhead);</pre>			~
~	<pre>int arr[] = {0, 4, 2, 5, 1, 0, 6, 4, 8, 6}; int k = 11; LLNode* head = LLNode::createWithIterators(arr, arr + sizeof(arr) / sizeof(int)); LLNode::printList(head); cout << "\n"; LLNode* newhead = rotateLinkedList(head, k); LLNode::printList(newhead);</pre>		[0, 4, 2, 5, 1, 0, 6, 4, 8, 6] [6, 0, 4, 2, 5, 1, 0, 6, 4, 8]	*

		Expected	Got	
6, 0, 7 4, 9, 7 9, 7, 9 7, 5, 4 3, 0, 1 3, 5, 2 int k = LLNode* + sizeo LLNode: cout << LLNode*	2, 7, 2, 0, 6, 7, 6, 5, 1, 9, 7, 1, 2, 7, 8, 4, 7, 6, 9, 0, 2, 7, 0, 5, 5, 6, 8, 3, 1, 9, 1, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 0, 7, 2, 9, 1, 0, 9}; = 35; * head = LLNode::createWithIterators(arr, arr of(arr) / sizeof(int)); ::printList(head);	[6, 1, 3, 2, 6, 0, 0, 0, 3, 3, 9, 8, 5, 6, 0, 7, 7, 8, 5, 7, 7, 9, 6, 3, 3, 0, 0, 8, 0, 0, 4, 9, 7, 1, 7, 2, 7, 5, 4, 4, 7, 5, 9, 2, 4, 5, 7, 9, 7, 9, 7, 1, 2, 7, 8, 7, 5, 6, 8, 3, 1, 9, 3, 0, 1, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 0, 7, 3, 5, 2, 9, 1, 0, 9, 6, 1, 3, 2, 6, 0, 0, 0, 3, 3, 9, 8, 5, 6, 0, 7, 7, 8, 5, 7, 7, 9, 6, 3, 3, 0, 0, 8, 0, 0, 4, 9, 7, 1, 7, 2, 7, 5, 4, 4, 7, 5, 9, 2, 4, 5, 7, 9, 7, 9, 7, 2, 0, 6, 7, 6, 5, 1, 9, 7, 1, 2, 7, 8, 7,	[6, 1, 3, 2, 6, 0, 0, 0, 3, 3, 9, 8, 5, 6, 0, 7, 7, 8, 5, 7, 7, 9, 6, 3, 3, 0, 0, 8, 0, 0, 4, 9, 7, 1, 7, 2, 7, 5, 4, 4, 7, 5, 9, 2, 4, 5, 7, 9, 7, 9, 7, 1, 2, 7, 8, 7, 5, 6, 8, 3, 1, 9, 3, 0, 1, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 6, 9, 2, 2, 0, 6, 7, 4, 4, 6, 0, 7, 3, 5, 2, 9, 1, 0, 9, 6, 1, 3, 2, 6, 0, 0, 0, 3, 3, 9, 8, 5, 6, 0, 7, 7, 8, 5, 7, 7, 9, 6, 3, 3, 0, 0, 8, 0, 0, 4, 9, 7, 1, 7, 2, 7, 5, 4, 4, 7, 5, 9, 2, 4, 5, 7, 9, 7, 9, 7, 2, 0, 6, 7, 6, 5, 1, 9, 7, 1, 2, 7, 8, 7,	*

Test	Expected	Got	
int arr[] = {9, 1, 7, 5, 8, 6, 2, 2, 2, 6, 0, 8, 1,	[9, 1, 7, 5, 8, 6, 2, 2, 2, 6,	[9, 1, 7, 5, 8, 6, 2, 2, 2, 6,	~
9, 6, 8, 4, 8, 4, 3, 7, 0, 7, 8, 9, 5, 3, 4, 7, 4,	0, 8, 1, 9, 6, 8, 4, 8, 4, 3,	0, 8, 1, 9, 6, 8, 4, 8, 4, 3,	
3, 5, 2, 2, 7, 8, 9, 7, 1, 9, 9, 8, 3, 5, 7, 1, 6,	7, 0, 7, 8, 9, 5, 3, 4, 7, 4,	7, 0, 7, 8, 9, 5, 3, 4, 7, 4,	
9, 1, 2, 0, 6, 8, 0, 4, 1, 6, 5, 8, 7, 6, 8, 0, 5,	3, 5, 2, 2, 7, 8, 9, 7, 1, 9,	3, 5, 2, 2, 7, 8, 9, 7, 1, 9,	
7, 8, 8, 6, 7, 5, 8, 0, 7, 6, 4, 9, 5, 9, 6, 4, 1,	9, 8, 3, 5, 7, 1, 6, 9, 1, 2,	9, 8, 3, 5, 7, 1, 6, 9, 1, 2,	
5, 6, 2, 2, 6, 7, 0, 3, 4, 2, 3, 9, 0, 9, 6, 3, 6,	0, 6, 8, 0, 4, 1, 6, 5, 8, 7,	0, 6, 8, 0, 4, 1, 6, 5, 8, 7,	
7, 5, 5, 5, 9, 0, 6, 1, 1, 5, 0, 9, 1, 1, 1, 0, 4,	6, 8, 0, 5, 7, 8, 8, 6, 7, 5,	6, 8, 0, 5, 7, 8, 8, 6, 7, 5,	
6, 3, 3, 3, 5, 8, 7, 4, 7, 1, 7, 1, 8, 4, 2, 0, 1,	8, 0, 7, 6, 4, 9, 5, 9, 6, 4,	8, 0, 7, 6, 4, 9, 5, 9, 6, 4,	
9, 0, 7, 9, 2, 8, 9, 2, 5, 3, 5, 9, 3, 2, 7, 3, 5,	1, 5, 6, 2, 2, 6, 7, 0, 3, 4,	1, 5, 6, 2, 2, 6, 7, 0, 3, 4,	
9, 5, 5, 3, 2, 3, 9, 4, 1, 6, 1, 8, 3, 1, 4, 5, 2,	2, 3, 9, 0, 9, 6, 3, 6, 7, 5,	2, 3, 9, 0, 9, 6, 3, 6, 7, 5,	
5, 7, 7, 0, 9, 6, 6, 4, 8, 1, 1, 6, 0, 2, 6, 0, 7,	5, 5, 9, 0, 6, 1, 1, 5, 0, 9,	5, 5, 9, 0, 6, 1, 1, 5, 0, 9,	
5, 5, 0, 5, 2, 6, 9, 9, 9, 9, 2, 3, 0, 6, 8, 8, 4,	1, 1, 1, 0, 4, 6, 3, 3, 3, 5,	1, 1, 1, 0, 4, 6, 3, 3, 3, 5,	
5, 6, 2, 8, 5, 9, 8, 3, 6, 8, 8, 6, 2, 1, 2, 1, 4,	8, 7, 4, 7, 1, 7, 1, 8, 4, 2,	8, 7, 4, 7, 1, 7, 1, 8, 4, 2,	
6, 2, 0, 9, 3, 9, 6, 4, 2, 3, 6, 2, 0, 9, 8, 7, 0,	0, 1, 9, 0, 7, 9, 2, 8, 9, 2,	0, 1, 9, 0, 7, 9, 2, 8, 9, 2,	
6, 0, 7, 0, 5, 9, 4, 3, 7, 9, 7, 3, 5, 7, 0, 3, 1,	5, 3, 5, 9, 3, 2, 7, 3, 5, 9,	5, 3, 5, 9, 3, 2, 7, 3, 5, 9,	
8, 9, 9, 4, 0, 8, 6, 4, 6, 7, 3, 8, 1, 2, 1, 5, 4,	5, 5, 3, 2, 3, 9, 4, 1, 6, 1,	5, 5, 3, 2, 3, 9, 4, 1, 6, 1,	
9, 5, 9, 5, 8, 6, 6, 8, 9, 4, 4, 0, 6, 4, 5, 3, 0,	8, 3, 1, 4, 5, 2, 5, 7, 7, 0,	8, 3, 1, 4, 5, 2, 5, 7, 7, 0,	
3, 9, 7, 1, 7, 2, 5, 0, 1, 9, 1, 2, 5, 6, 8, 7, 1,	9, 6, 6, 4, 8, 1, 1, 6, 0, 2,	9, 6, 6, 4, 8, 1, 1, 6, 0, 2,	
6, 9, 6, 2, 8, 1, 2, 0, 4, 3, 4, 6, 7, 1, 0, 7, 0,	6, 0, 7, 5, 5, 0, 5, 2, 6, 9,	6, 0, 7, 5, 5, 0, 5, 2, 6, 9,	
7, 9, 4, 0, 1, 2, 3, 5, 6, 3, 5, 6, 7, 5, 4, 2, 4,	9, 9, 9, 2, 3, 0, 6, 8, 8, 4,	9, 9, 9, 2, 3, 0, 6, 8, 8, 4,	
8, 2, 5, 8, 8, 6, 6, 2, 6, 6, 8, 1, 2, 2, 8, 0, 8,	5, 6, 2, 8, 5, 9, 8, 3, 6, 8,	5, 6, 2, 8, 5, 9, 8, 3, 6, 8,	
9, 0, 7, 9, 0, 1, 6, 6, 3, 6, 5, 1, 5, 9, 0, 3, 7,	8, 6, 2, 1, 2, 1, 4, 6, 2, 0,	8, 6, 2, 1, 2, 1, 4, 6, 2, 0,	
3, 7, 2, 0, 0, 2, 7, 5, 2, 9, 5, 5, 8, 1, 7, 7, 9,	9, 3, 9, 6, 4, 2, 3, 6, 2, 0,	9, 3, 9, 6, 4, 2, 3, 6, 2, 0,	
7, 1, 1, 6, 4, 3, 8, 0, 7, 9, 1, 0, 9, 5, 2, 7, 2,	9, 8, 7, 0, 6, 0, 7, 0, 5, 9,	9, 8, 7, 0, 6, 0, 7, 0, 5, 9,	
1, 5, 3, 9, 7, 6, 9, 1, 3, 5, 5, 0, 6, 9, 4, 7, 1,	4, 3, 7, 9, 7, 3, 5, 7, 0, 3,	4, 3, 7, 9, 7, 3, 5, 7, 0, 3,	
7, 2, 0, 4, 5, 8, 1, 6, 1, 0, 7, 2, 2, 6, 7, 4, 4,	1, 8, 9, 9, 4, 0, 8, 6, 4, 6,	1, 8, 9, 9, 4, 0, 8, 6, 4, 6,	
9, 5, 4, 5, 2, 0, 8, 0, 5, 5, 1, 8, 9, 4, 5, 6, 1,	7, 3, 8, 1, 2, 1, 5, 4, 9, 5,	7, 3, 8, 1, 2, 1, 5, 4, 9, 5,	
2, 0, 7, 0, 2, 1, 6, 8, 8, 7, 8, 7, 0, 1, 8, 5, 6,	9, 5, 8, 6, 6, 8, 9, 4, 4, 0,	9, 5, 8, 6, 6, 8, 9, 4, 4, 0,	
5, 9, 2, 2, 9, 3, 6, 0, 1, 7, 9, 8, 1, 1, 5, 4, 5,	6, 4, 5, 3, 0, 3, 9, 7, 1, 7,	6, 4, 5, 3, 0, 3, 9, 7, 1, 7,	
7, 5, 0, 2, 0, 4, 4, 8, 0, 7, 3};	2, 5, 0, 1, 9, 1, 2, 5, 6, 8,	2, 5, 0, 1, 9, 1, 2, 5, 6, 8,	
int k = 196;	7, 1, 6, 9, 6, 2, 8, 1, 2, 0,	7, 1, 6, 9, 6, 2, 8, 1, 2, 0,	
LLNode* head = LLNode::createWithIterators(arr, arr	4, 3, 4, 6, 7, 1, 0, 7, 0, 7,	4, 3, 4, 6, 7, 1, 0, 7, 0, 7,	
<pre>+ sizeof(arr) / sizeof(int));</pre>	9, 4, 0, 1, 2, 3, 5, 6, 3, 5,	9, 4, 0, 1, 2, 3, 5, 6, 3, 5,	
<pre>LLNode::printList(head);</pre>	6, 7, 5, 4, 2, 4, 8, 2, 5, 8,	6, 7, 5, 4, 2, 4, 8, 2, 5, 8,	
cout << "\n";	8, 6, 6, 2, 6, 6, 8, 1, 2, 2,	8, 6, 6, 2, 6, 6, 8, 1, 2, 2,	
	8, 0, 8, 9, 0, 7, 9, 0, 1, 6,	8, 0, 8, 9, 0, 7, 9, 0, 1, 6,	

Test	Expected	Got
LLNode* newhead = rotateLinkedList(head, k);	6, 3, 6, 5, 1, 5, 9, 0, 3, 7,	6, 3, 6, 5, 1, 5, 9, 0, 3, 7,
<pre>LLNode::printList(newhead);</pre>	3, 7, 2, 0, 0, 2, 7, 5, 2, 9,	3, 7, 2, 0, 0, 2, 7, 5, 2, 9,
	5, 5, 8, 1, 7, 7, 9, 7, 1, 1,	5, 5, 8, 1, 7, 7, 9, 7, 1, 1,
	6, 4, 3, 8, 0, 7, 9, 1, 0, 9,	6, 4, 3, 8, 0, 7, 9, 1, 0, 9,
	5, 2, 7, 2, 1, 5, 3, 9, 7, 6,	5, 2, 7, 2, 1, 5, 3, 9, 7, 6,
	9, 1, 3, 5, 5, 0, 6, 9, 4, 7,	9, 1, 3, 5, 5, 0, 6, 9, 4, 7,
	1, 7, 2, 0, 4, 5, 8, 1, 6, 1,	1, 7, 2, 0, 4, 5, 8, 1, 6, 1,
	0, 7, 2, 2, 6, 7, 4, 4, 9, 5,	0, 7, 2, 2, 6, 7, 4, 4, 9, 5,
	4, 5, 2, 0, 8, 0, 5, 5, 1, 8,	4, 5, 2, 0, 8, 0, 5, 5, 1, 8,
	9, 4, 5, 6, 1, 2, 0, 7, 0, 2,	9, 4, 5, 6, 1, 2, 0, 7, 0, 2,
	1, 6, 8, 8, 7, 8, 7, 0, 1, 8,	1, 6, 8, 8, 7, 8, 7, 0, 1, 8,
	5, 6, 5, 9, 2, 2, 9, 3, 6, 0,	5, 6, 5, 9, 2, 2, 9, 3, 6, 0,
	1, 7, 9, 8, 1, 1, 5, 4, 5, 7,	1, 7, 9, 8, 1, 1, 5, 4, 5, 7,
	5, 0, 2, 0, 4, 4, 8, 0, 7, 3]	5, 0, 2, 0, 4, 4, 8, 0, 7, 3]
	[6, 2, 8, 1, 2, 0, 4, 3, 4, 6,	[6, 2, 8, 1, 2, 0, 4, 3, 4, 6,
	7, 1, 0, 7, 0, 7, 9, 4, 0, 1,	7, 1, 0, 7, 0, 7, 9, 4, 0, 1,
	2, 3, 5, 6, 3, 5, 6, 7, 5, 4,	2, 3, 5, 6, 3, 5, 6, 7, 5, 4,
	2, 4, 8, 2, 5, 8, 8, 6, 6, 2,	2, 4, 8, 2, 5, 8, 8, 6, 6, 2,
	6, 6, 8, 1, 2, 2, 8, 0, 8, 9,	6, 6, 8, 1, 2, 2, 8, 0, 8, 9,
	0, 7, 9, 0, 1, 6, 6, 3, 6, 5,	0, 7, 9, 0, 1, 6, 6, 3, 6, 5,
	1, 5, 9, 0, 3, 7, 3, 7, 2, 0,	1, 5, 9, 0, 3, 7, 3, 7, 2, 0,
	0, 2, 7, 5, 2, 9, 5, 5, 8, 1,	0, 2, 7, 5, 2, 9, 5, 5, 8, 1,
	7, 7, 9, 7, 1, 1, 6, 4, 3, 8,	7, 7, 9, 7, 1, 1, 6, 4, 3, 8,
	0, 7, 9, 1, 0, 9, 5, 2, 7, 2,	0, 7, 9, 1, 0, 9, 5, 2, 7, 2,
	1, 5, 3, 9, 7, 6, 9, 1, 3, 5,	1, 5, 3, 9, 7, 6, 9, 1, 3, 5,
	5, 0, 6, 9, 4, 7, 1, 7, 2, 0,	5, 0, 6, 9, 4, 7, 1, 7, 2, 0,
	4, 5, 8, 1, 6, 1, 0, 7, 2, 2,	4, 5, 8, 1, 6, 1, 0, 7, 2, 2,
	6, 7, 4, 4, 9, 5, 4, 5, 2, 0,	6, 7, 4, 4, 9, 5, 4, 5, 2, 0,
	8, 0, 5, 5, 1, 8, 9, 4, 5, 6,	8, 0, 5, 5, 1, 8, 9, 4, 5, 6,
	1, 2, 0, 7, 0, 2, 1, 6, 8, 8,	1, 2, 0, 7, 0, 2, 1, 6, 8, 8,
	7, 8, 7, 0, 1, 8, 5, 6, 5, 9,	
	2, 2, 9, 3, 6, 0, 1, 7, 9, 8,	
	1, 1, 5, 4, 5, 7, 5, 0, 2, 0,	1, 1, 5, 4, 5, 7, 5, 0, 2, 0,
	4, 4, 8, 0, 7, 3, 9, 1, 7, 5,	
	8, 6, 2, 2, 2, 6, 0, 8, 1, 9,	
	6, 8, 4, 8, 4, 3, 7, 0, 7, 8,	6, 8, 4, 8, 4, 3, 7, 0, 7, 8,

Test	Expected	Got
	9, 5, 3, 4, 7, 4, 3, 5, 2,	2, 9, 5, 3, 4, 7, 4, 3, 5, 2, 2,
	7, 8, 9, 7, 1, 9, 9, 8, 3,	5, 7, 8, 9, 7, 1, 9, 9, 8, 3, 5,
	7, 1, 6, 9, 1, 2, 0, 6, 8,	0, 7, 1, 6, 9, 1, 2, 0, 6, 8, 0,
	4, 1, 6, 5, 8, 7, 6, 8, 0,	5, 4, 1, 6, 5, 8, 7, 6, 8, 0, 5,
	7, 8, 8, 6, 7, 5, 8, 0, 7,	6, 7, 8, 8, 6, 7, 5, 8, 0, 7, 6,
	4, 9, 5, 9, 6, 4, 1, 5, 6,	2, 4, 9, 5, 9, 6, 4, 1, 5, 6, 2,
	2, 6, 7, 0, 3, 4, 2, 3, 9,	0, 2, 6, 7, 0, 3, 4, 2, 3, 9, 0,
	9, 6, 3, 6, 7, 5, 5, 5, 9,	0, 9, 6, 3, 6, 7, 5, 5, 5, 9, 0,
	6, 1, 1, 5, 0, 9, 1, 1, 1,	0, 6, 1, 1, 5, 0, 9, 1, 1, 1, 0,
	4, 6, 3, 3, 5, 8, 7, 4,	7, 4, 6, 3, 3, 3, 5, 8, 7, 4, 7,
	1, 7, 1, 8, 4, 2, 0, 1, 9,	0, 1, 7, 1, 8, 4, 2, 0, 1, 9, 0,
	7, 9, 2, 8, 9, 2, 5, 3, 5,	9, 7, 9, 2, 8, 9, 2, 5, 3, 5, 9,
	3, 2, 7, 3, 5, 9, 5, 5, 3,	2, 3, 2, 7, 3, 5, 9, 5, 5, 3, 2,
	3, 9, 4, 1, 6, 1, 8, 3, 1,	4, 3, 9, 4, 1, 6, 1, 8, 3, 1, 4,
	5, 2, 5, 7, 7, 0, 9, 6, 6,	4, 5, 2, 5, 7, 7, 0, 9, 6, 6, 4,
	8, 1, 1, 6, 0, 2, 6, 0, 7,	5, 8, 1, 1, 6, 0, 2, 6, 0, 7, 5,
	5, 0, 5, 2, 6, 9, 9, 9, 9,	2, 5, 0, 5, 2, 6, 9, 9, 9, 9, 2,
	3, 0, 6, 8, 8, 4, 5, 6, 2,	8, 3, 0, 6, 8, 8, 4, 5, 6, 2, 8,
	5, 9, 8, 3, 6, 8, 8, 6, 2,	1, 5, 9, 8, 3, 6, 8, 8, 6, 2, 1,
	2, 1, 4, 6, 2, 0, 9, 3, 9,	6, 2, 1, 4, 6, 2, 0, 9, 3, 9, 6,
	4, 2, 3, 6, 2, 0, 9, 8, 7,	0, 4, 2, 3, 6, 2, 0, 9, 8, 7, 0,
	6, 0, 7, 0, 5, 9, 4, 3, 7,	9, 6, 0, 7, 0, 5, 9, 4, 3, 7, 9,
	7, 3, 5, 7, 0, 3, 1, 8, 9,	9, 7, 3, 5, 7, 0, 3, 1, 8, 9, 9,
	4, 0, 8, 6, 4, 6, 7, 3, 8,	1, 4, 0, 8, 6, 4, 6, 7, 3, 8, 1,
	2, 1, 5, 4, 9, 5, 9, 5, 8,	6, 2, 1, 5, 4, 9, 5, 9, 5, 8, 6,
	6, 8, 9, 4, 4, 0, 6, 4, 5,	3, 6, 8, 9, 4, 4, 0, 6, 4, 5, 3,
	0, 3, 9, 7, 1, 7, 2, 5, 0,	1, 0, 3, 9, 7, 1, 7, 2, 5, 0, 1,
	9, 1, 2, 5, 6, 8, 7, 1, 6,	9] 9, 1, 2, 5, 6, 8, 7, 1, 6, 9]

Test	Expected	Got	
int arr[] = {8, 0, 8, 8, 9, 3, 3, 5, 4, 9, 7, 9, 5,	[8, 0, 8, 8, 9, 3, 3, 5, 4, 9,	[8, 0, 8, 8, 9, 3, 3, 5, 4, 9,	~
3, 8, 6, 1, 0, 6, 4, 5, 1, 1, 5, 3, 8, 6, 1, 1, 1,	7, 9, 5, 3, 8, 6, 1, 0, 6, 4,	7, 9, 5, 3, 8, 6, 1, 0, 6, 4,	
0, 1, 4, 9, 0, 1, 8, 0, 2, 7, 1, 5, 7, 6, 7, 7, 9,	5, 1, 1, 5, 3, 8, 6, 1, 1, 1,	5, 1, 1, 5, 3, 8, 6, 1, 1, 1,	
5, 0, 9, 6, 3, 7, 6, 6, 4, 6, 2, 9, 1, 5, 0, 8, 6,	0, 1, 4, 9, 0, 1, 8, 0, 2, 7,	0, 1, 4, 9, 0, 1, 8, 0, 2, 7,	
0, 8, 6, 3, 0, 3, 6, 8, 5, 0, 1, 9, 9, 6, 3, 3, 2,	1, 5, 7, 6, 7, 7, 9, 5, 0, 9,	1, 5, 7, 6, 7, 7, 9, 5, 0, 9,	
9, 2, 0, 0, 5, 0, 4, 6, 7, 2, 6, 5, 2, 8, 8, 7, 1,	6, 3, 7, 6, 6, 4, 6, 2, 9, 1,	6, 3, 7, 6, 6, 4, 6, 2, 9, 1,	
0, 9, 7, 7, 1, 5, 8, 7, 5, 7, 8, 7, 8, 7, 1, 7, 9,	5, 0, 8, 6, 0, 8, 6, 3, 0, 3,	5, 0, 8, 6, 0, 8, 6, 3, 0, 3,	
7, 1, 3, 0, 5, 5, 1, 0, 2, 1, 0, 1, 5, 3, 7, 7, 9,	6, 8, 5, 0, 1, 9, 9, 6, 3, 3,	6, 8, 5, 0, 1, 9, 9, 6, 3, 3,	
6, 1, 6, 4, 8, 9, 8, 6, 0, 0, 3, 6, 2, 3, 4, 9, 7,	2, 9, 2, 0, 0, 5, 0, 4, 6, 7,	2, 9, 2, 0, 0, 5, 0, 4, 6, 7,	
4, 2, 2, 9, 7, 7, 4, 9, 9, 7, 5, 6, 2, 4, 0, 1, 9,	2, 6, 5, 2, 8, 8, 7, 1, 0, 9,	2, 6, 5, 2, 8, 8, 7, 1, 0, 9,	
9, 8, 4, 6, 1, 2, 9, 6, 7, 9, 4, 7, 5, 2, 9, 4, 2,	7, 7, 1, 5, 8, 7, 5, 7, 8, 7,	7, 7, 1, 5, 8, 7, 5, 7, 8, 7,	
5, 9, 4, 1, 6, 0, 0, 5, 0, 0, 6, 1, 7, 8, 6, 9, 5,	8, 7, 1, 7, 9, 7, 1, 3, 0, 5,	8, 7, 1, 7, 9, 7, 1, 3, 0, 5,	
4, 7, 0, 5, 3, 2, 4, 9, 9, 2, 3, 4, 4, 1, 8, 2, 4,	5, 1, 0, 2, 1, 0, 1, 5, 3, 7,	5, 1, 0, 2, 1, 0, 1, 5, 3, 7,	
4, 6, 2, 0, 5, 9, 4, 5, 8, 1, 8, 4, 7, 5, 4, 9, 7,	7, 9, 6, 1, 6, 4, 8, 9, 8, 6,	7, 9, 6, 1, 6, 4, 8, 9, 8, 6,	
3, 1, 7, 7, 5, 4, 5, 6, 2, 1, 7, 5, 9, 7, 4, 8, 4,	0, 0, 3, 6, 2, 3, 4, 9, 7, 4,	0, 0, 3, 6, 2, 3, 4, 9, 7, 4,	
6, 9, 3, 4, 4, 3, 7, 1, 3, 9, 3, 3, 7, 9, 7, 9, 4,	2, 2, 9, 7, 7, 4, 9, 9, 7, 5,	2, 2, 9, 7, 7, 4, 9, 9, 7, 5,	
6, 0, 5, 5, 5, 6, 2, 5, 5, 9, 0, 2, 9, 0, 3, 8, 7,	6, 2, 4, 0, 1, 9, 9, 8, 4, 6,	6, 2, 4, 0, 1, 9, 9, 8, 4, 6,	
6, 1, 0, 4, 0, 7, 4, 2, 5, 0, 0, 6, 4, 3, 6, 0, 9,	1, 2, 9, 6, 7, 9, 4, 7, 5, 2,	1, 2, 9, 6, 7, 9, 4, 7, 5, 2,	
2, 4, 1, 0, 3, 8, 0, 1, 7, 3, 8, 9, 0, 5, 3, 2, 8,	9, 4, 2, 5, 9, 4, 1, 6, 0, 0,	9, 4, 2, 5, 9, 4, 1, 6, 0, 0,	
4, 0, 4, 6, 9, 8, 6, 5, 2, 7, 9, 0, 1, 7, 5, 5, 9,	5, 0, 0, 6, 1, 7, 8, 6, 9, 5,	5, 0, 0, 6, 1, 7, 8, 6, 9, 5,	
5, 6, 8, 2, 8, 6, 7, 4, 5, 9, 0, 2, 6, 8, 4, 3, 5,	4, 7, 0, 5, 3, 2, 4, 9, 9, 2,	4, 7, 0, 5, 3, 2, 4, 9, 9, 2,	
9, 9, 1, 0, 3, 2, 3, 8, 1, 0, 5, 9, 6, 8, 9, 0, 9,	3, 4, 4, 1, 8, 2, 4, 4, 6, 2,	3, 4, 4, 1, 8, 2, 4, 4, 6, 2,	
9, 4, 7, 5, 1, 7, 0, 3, 8, 9, 9, 1, 0, 3, 0, 4, 2,	0, 5, 9, 4, 5, 8, 1, 8, 4, 7,	0, 5, 9, 4, 5, 8, 1, 8, 4, 7,	
6, 6, 9, 1, 2, 5, 2, 3, 5, 1, 5, 0, 1, 6, 4, 8, 8,	5, 4, 9, 7, 3, 1, 7, 7, 5, 4,	5, 4, 9, 7, 3, 1, 7, 7, 5, 4,	
4, 9, 5, 6, 5, 4, 2, 5, 9, 7, 3, 0, 6, 6, 8, 8, 7,	5, 6, 2, 1, 7, 5, 9, 7, 4, 8,	5, 6, 2, 1, 7, 5, 9, 7, 4, 8,	
1, 0, 5, 3, 5, 5, 9, 4, 8, 4, 6, 9, 3, 8, 3, 4, 9,	4, 6, 9, 3, 4, 4, 3, 7, 1, 3,	4, 6, 9, 3, 4, 4, 3, 7, 1, 3,	
6, 8, 9, 7, 3, 4, 1, 0, 1, 2, 0, 0, 8, 1, 8, 5, 1,	9, 3, 3, 7, 9, 7, 9, 4, 6, 0,	9, 3, 3, 7, 9, 7, 9, 4, 6, 0,	
5, 1, 0, 1, 1, 4, 0, 8, 7, 2, 8, 0, 0, 9, 6, 2, 1,	5, 5, 5, 6, 2, 5, 5, 9, 0, 2,	5, 5, 5, 6, 2, 5, 5, 9, 0, 2,	
5, 1, 3, 4, 2, 5, 2, 0, 2, 5, 8, 1, 1, 6, 4, 6, 5,	9, 0, 3, 8, 7, 6, 1, 0, 4, 0,	9, 0, 3, 8, 7, 6, 1, 0, 4, 0,	
8, 5, 9, 5, 8, 1, 8, 5, 4, 2, 0, 5, 5, 0, 1, 9, 7,	7, 4, 2, 5, 0, 0, 6, 4, 3, 6,	7, 4, 2, 5, 0, 0, 6, 4, 3, 6,	
1, 1, 7, 6, 1, 8, 8, 4, 6, 4, 4, 3, 1, 0, 3, 3, 7,	0, 9, 2, 4, 1, 0, 3, 8, 0, 1,	0, 9, 2, 4, 1, 0, 3, 8, 0, 1,	
9, 7, 9, 5, 1, 5, 1, 5, 2, 0, 3, 1, 4, 9, 2, 6, 5,	7, 3, 8, 9, 0, 5, 3, 2, 8, 4,	7, 3, 8, 9, 0, 5, 3, 2, 8, 4,	
3, 2, 7, 8, 1, 6, 7, 0, 2, 7, 6, 1, 5, 8, 3, 5, 0,	0, 4, 6, 9, 8, 6, 5, 2, 7, 9,	0, 4, 6, 9, 8, 6, 5, 2, 7, 9,	
4, 7, 9, 8, 8, 2, 6, 9, 9, 7, 8, 3, 8, 8, 0, 8, 6,	0, 1, 7, 5, 5, 9, 5, 6, 8, 2,	0, 1, 7, 5, 5, 9, 5, 6, 8, 2,	
4, 5, 7, 2, 0, 7, 3, 5, 5, 3, 5, 6, 2, 3, 3, 1, 2,	8, 6, 7, 4, 5, 9, 0, 2, 6, 8,	8, 6, 7, 4, 5, 9, 0, 2, 6, 8,	
4, 4, 4, 5, 5, 4, 9, 7, 0, 8, 0, 4, 3, 0, 9, 7, 7,	4, 3, 5, 9, 9, 1, 0, 3, 2, 3,	4, 3, 5, 9, 9, 1, 0, 3, 2, 3,	

	Expected	Got
8, 1, 3, 7, 1, 5, 4, 7, 6, 3, 8, 6, 7, 5, 4, 2, 0,	8, 1, 0, 5, 9, 6, 8, 9, 0, 9,	8, 1, 0, 5, 9, 6, 8, 9, 0, 9,
6, 7, 4, 7, 4, 6, 1, 3, 7, 2, 4, 4, 0, 1, 2, 9, 1,	9, 4, 7, 5, 1, 7, 0, 3, 8, 9,	9, 4, 7, 5, 1, 7, 0, 3, 8, 9,
9, 5, 7, 1, 7, 7, 3, 2, 9, 8, 2, 4, 4, 9, 0, 5, 6,	9, 1, 0, 3, 0, 4, 2, 6, 6, 9,	9, 1, 0, 3, 0, 4, 2, 6, 6, 9,
7, 9, 1, 8, 3, 8, 2, 3, 2, 4, 6, 2, 0, 7, 5, 9, 5,	1, 2, 5, 2, 3, 5, 1, 5, 0, 1,	1, 2, 5, 2, 3, 5, 1, 5, 0, 1,
2, 2, 6, 8, 6, 9, 9, 3, 0, 4, 1, 5, 2, 3, 9, 3, 9,	6, 4, 8, 8, 4, 9, 5, 6, 5, 4,	6, 4, 8, 8, 4, 9, 5, 6, 5, 4,
1, 7, 3, 1, 2, 8, 2, 0, 4, 1, 1, 8, 4, 8, 2, 0, 0,	2, 5, 9, 7, 3, 0, 6, 6, 8, 8,	2, 5, 9, 7, 3, 0, 6, 6, 8, 8,
6, 6, 5, 1, 3, 5, 0, 6, 1, 6, 1, 7, 9, 2, 3, 5, 2,	7, 1, 0, 5, 3, 5, 5, 9, 4, 8,	7, 1, 0, 5, 3, 5, 5, 9, 4, 8,
9, 6, 8, 3, 6, 9, 4, 1, 0, 8, 7, 2, 5, 7, 4, 4, 0,	4, 6, 9, 3, 8, 3, 4, 9, 6, 8,	4, 6, 9, 3, 8, 3, 4, 9, 6, 8,
2, 0, 6, 6, 4, 9, 1, 8, 1, 1, 8, 8, 3, 5, 2, 5, 5,	9, 7, 3, 4, 1, 0, 1, 2, 0, 0,	9, 7, 3, 4, 1, 0, 1, 2, 0, 0,
5, 1, 8, 3, 7, 8, 8, 1, 1, 5, 5, 1, 9, 7, 2, 2, 7,	8, 1, 8, 5, 1, 5, 1, 0, 1, 1,	8, 1, 8, 5, 1, 5, 1, 0, 1, 1,
2, 4, 4, 1, 0, 0, 0, 8, 7, 9, 4, 0, 0, 3, 5, 5, 1,	4, 0, 8, 7, 2, 8, 0, 0, 9, 6,	4, 0, 8, 7, 2, 8, 0, 0, 9, 6,
9, 5, 9, 3, 7, 5, 9, 0, 9, 8, 2, 7, 2, 0, 5, 2, 5,	2, 1, 5, 1, 3, 4, 2, 5, 2, 0,	2, 1, 5, 1, 3, 4, 2, 5, 2, 0,
1, 6, 0, 8, 5, 2, 4, 9, 0, 8, 3, 9, 1, 9, 9, 2, 5,	2, 5, 8, 1, 1, 6, 4, 6, 5, 8,	2, 5, 8, 1, 1, 6, 4, 6, 5, 8,
5, 3, 0, 5, 4, 4, 5, 3, 2, 0, 2, 4, 3, 5, 1, 9, 3,	5, 9, 5, 8, 1, 8, 5, 4, 2, 0,	5, 9, 5, 8, 1, 8, 5, 4, 2, 0,
0, 8, 1, 4, 4, 9, 9, 0, 9, 9, 1, 3, 0, 1, 1, 9, 6,	5, 5, 0, 1, 9, 7, 1, 1, 7, 6,	5, 5, 0, 1, 9, 7, 1, 1, 7, 6,
9, 2, 4, 4, 2, 5, 2, 3, 9, 6, 2, 3, 0, 8, 3, 2, 8,	1, 8, 8, 4, 6, 4, 4, 3, 1, 0,	1, 8, 8, 4, 6, 4, 4, 3, 1, 0,
8, 3, 0, 5, 1, 8, 8, 2, 9, 3, 7, 7, 4, 9, 6, 2, 0,	3, 3, 7, 9, 7, 9, 5, 1, 5, 1,	3, 3, 7, 9, 7, 9, 5, 1, 5, 1,
0, 6, 8, 4, 6, 7, 7, 8, 0, 7, 7, 5, 6, 5, 6, 2, 8,	5, 2, 0, 3, 1, 4, 9, 2, 6, 5,	5, 2, 0, 3, 1, 4, 9, 2, 6, 5,
3, 2, 7, 5, 7, 4, 0, 0, 2, 2, 6, 7, 8, 5, 9, 3, 3,	3, 2, 7, 8, 1, 6, 7, 0, 2, 7,	3, 2, 7, 8, 1, 6, 7, 0, 2, 7,
0, 6, 5, 4, 5, 9, 4, 1, 2, 9, 7, 6, 2, 0, 2, 3, 3,	6, 1, 5, 8, 3, 5, 0, 4, 7, 9,	6, 1, 5, 8, 3, 5, 0, 4, 7, 9,
8, 0, 1, 8, 4, 7, 1, 0, 6, 4, 1, 0, 4, 0, 4, 8, 9,	8, 8, 2, 6, 9, 9, 7, 8, 3, 8,	8, 8, 2, 6, 9, 9, 7, 8, 3, 8,
5, 1, 0, 5, 2, 4, 5, 6, 3, 5, 2, 2, 9, 6, 0, 2, 1,	8, 0, 8, 6, 4, 5, 7, 2, 0, 7,	8, 0, 8, 6, 4, 5, 7, 2, 0, 7,
2, 9, 7, 8, 3, 1, 6, 0, 2, 2, 7, 8, 9, 3, 4, 5, 7,	3, 5, 5, 3, 5, 6, 2, 3, 3, 1,	3, 5, 5, 3, 5, 6, 2, 3, 3, 1,
8, 4, 0, 7, 2, 8};	2, 4, 4, 4, 5, 5, 4, 9, 7, 0,	2, 4, 4, 4, 5, 5, 4, 9, 7, 0,
int $k = 389$;	8, 0, 4, 3, 0, 9, 7, 7, 8, 1,	8, 0, 4, 3, 0, 9, 7, 7, 8, 1,
LLNode* head = LLNode::createWithIterators(arr, arr	3, 7, 1, 5, 4, 7, 6, 3, 8, 6,	3, 7, 1, 5, 4, 7, 6, 3, 8, 6,
<pre>+ sizeof(arr) / sizeof(int));</pre>	7, 5, 4, 2, 0, 6, 7, 4, 7, 4,	7, 5, 4, 2, 0, 6, 7, 4, 7, 4,
LLNode::printList(head);	6, 1, 3, 7, 2, 4, 4, 0, 1, 2,	6, 1, 3, 7, 2, 4, 4, 0, 1, 2,
cout << "\n";	9, 1, 9, 5, 7, 1, 7, 7, 3, 2,	9, 1, 9, 5, 7, 1, 7, 7, 3, 2,
<pre>LLNode* newhead = rotateLinkedList(head, k);</pre>	9, 8, 2, 4, 4, 9, 0, 5, 6, 7,	9, 8, 2, 4, 4, 9, 0, 5, 6, 7,
LLNode::printList(newhead);	9, 1, 8, 3, 8, 2, 3, 2, 4, 6,	9, 1, 8, 3, 8, 2, 3, 2, 4, 6,
	2, 0, 7, 5, 9, 5, 2, 2, 6, 8,	2, 0, 7, 5, 9, 5, 2, 2, 6, 8,
	6, 9, 9, 3, 0, 4, 1, 5, 2, 3,	
	9, 3, 9, 1, 7, 3, 1, 2, 8, 2,	9, 3, 9, 1, 7, 3, 1, 2, 8, 2,
	0, 4, 1, 1, 8, 4, 8, 2, 0, 0,	0, 4, 1, 1, 8, 4, 8, 2, 0, 0,
	6, 6, 5, 1, 3, 5, 0, 6, 1, 6,	6, 6, 5, 1, 3, 5, 0, 6, 1, 6,

Test	Expected	Got
	1, 7, 9, 2, 3, 5, 2, 9, 6, 8,	, 1, 7, 9, 2, 3, 5, 2, 9, 6, 8,
	3, 6, 9, 4, 1, 0, 8, 7, 2, 5,	, 3, 6, 9, 4, 1, 0, 8, 7, 2, 5,
	7, 4, 4, 0, 2, 0, 6, 6, 4, 9,	7, 4, 4, 0, 2, 0, 6, 6, 4, 9,
	1, 8, 1, 1, 8, 8, 3, 5, 2, 5,	, 1, 8, 1, 1, 8, 8, 3, 5, 2, 5,
	5, 5, 1, 8, 3, 7, 8, 8, 1, 1,	5, 5, 1, 8, 3, 7, 8, 8, 1, 1,
	5, 5, 1, 9, 7, 2, 2, 7, 2, 4,	, 5, 5, 1, 9, 7, 2, 2, 7, 2, 4,
	4, 1, 0, 0, 0, 8, 7, 9, 4, 0,	4, 1, 0, 0, 0, 8, 7, 9, 4, 0,
	0, 3, 5, 5, 1, 9, 5, 9, 3, 7,	0, 3, 5, 5, 1, 9, 5, 9, 3, 7,
	5, 9, 0, 9, 8, 2, 7, 2, 0, 5,	5, 9, 0, 9, 8, 2, 7, 2, 0, 5,
	2, 5, 1, 6, 0, 8, 5, 2, 4, 9,	, 2, 5, 1, 6, 0, 8, 5, 2, 4, 9,
	0, 8, 3, 9, 1, 9, 9, 2, 5, 5,	0, 8, 3, 9, 1, 9, 9, 2, 5, 5,
	3, 0, 5, 4, 4, 5, 3, 2, 0, 2,	3, 0, 5, 4, 4, 5, 3, 2, 0, 2,
	4, 3, 5, 1, 9, 3, 0, 8, 1, 4,	4, 3, 5, 1, 9, 3, 0, 8, 1, 4,
	4, 9, 9, 0, 9, 9, 1, 3, 0, 1,	4, 9, 9, 0, 9, 9, 1, 3, 0, 1,
	1, 9, 6, 9, 2, 4, 4, 2, 5, 2,	1, 9, 6, 9, 2, 4, 4, 2, 5, 2,
	3, 9, 6, 2, 3, 0, 8, 3, 2, 8,	3, 9, 6, 2, 3, 0, 8, 3, 2, 8,
	8, 3, 0, 5, 1, 8, 8, 2, 9, 3,	8, 3, 0, 5, 1, 8, 8, 2, 9, 3,
	7, 7, 4, 9, 6, 2, 0, 0, 6, 8,	7, 7, 4, 9, 6, 2, 0, 0, 6, 8,
	4, 6, 7, 7, 8, 0, 7, 7, 5, 6,	4, 6, 7, 7, 8, 0, 7, 7, 5, 6,
	5, 6, 2, 8, 3, 2, 7, 5, 7, 4,	5, 6, 2, 8, 3, 2, 7, 5, 7, 4,
	0, 0, 2, 2, 6, 7, 8, 5, 9, 3,	0, 0, 2, 2, 6, 7, 8, 5, 9, 3,
	3, 0, 6, 5, 4, 5, 9, 4, 1, 2,	3, 0, 6, 5, 4, 5, 9, 4, 1, 2,
	9, 7, 6, 2, 0, 2, 3, 3, 8, 0,	9, 7, 6, 2, 0, 2, 3, 3, 8, 0,
	1, 8, 4, 7, 1, 0, 6, 4, 1, 0,	, 1, 8, 4, 7, 1, 0, 6, 4, 1, 0,
	4, 0, 4, 8, 9, 5, 1, 0, 5, 2,	4, 0, 4, 8, 9, 5, 1, 0, 5, 2,
	4, 5, 6, 3, 5, 2, 2, 9, 6, 0,	4, 5, 6, 3, 5, 2, 2, 9, 6, 0,
	2, 1, 2, 9, 7, 8, 3, 1, 6, 0,	, 2, 1, 2, 9, 7, 8, 3, 1, 6, 0,
	2, 2, 7, 8, 9, 3, 4, 5, 7, 8,	, 2, 2, 7, 8, 9, 3, 4, 5, 7, 8,
	4, 0, 7, 2, 8]	4, 0, 7, 2, 8]
	[6, 3, 8, 6, 7, 5, 4, 2, 0, 6	
	7, 4, 7, 4, 6, 1, 3, 7, 2, 4,	
	4, 0, 1, 2, 9, 1, 9, 5, 7, 1,	
	7, 7, 3, 2, 9, 8, 2, 4, 4, 9,	
	0, 5, 6, 7, 9, 1, 8, 3, 8, 2,	
	3, 2, 4, 6, 2, 0, 7, 5, 9, 5,	
	2, 2, 6, 8, 6, 9, 9, 3, 0, 4,	, 2, 2, 6, 8, 6, 9, 9, 3, 0, 4,
The state of the s		

Test	Expected	Got
	1, 5, 2, 3, 9, 3, 9, 1, 7, 3	, 1, 5, 2, 3, 9, 3, 9, 1, 7, 3,
	1, 2, 8, 2, 0, 4, 1, 1, 8, 4	, 1, 2, 8, 2, 0, 4, 1, 1, 8, 4,
	8, 2, 0, 0, 6, 6, 5, 1, 3, 5	, 8, 2, 0, 0, 6, 6, 5, 1, 3, 5,
	0, 6, 1, 6, 1, 7, 9, 2, 3, 5	, 0, 6, 1, 6, 1, 7, 9, 2, 3, 5,
	2, 9, 6, 8, 3, 6, 9, 4, 1, 0	, 2, 9, 6, 8, 3, 6, 9, 4, 1, 0,
	8, 7, 2, 5, 7, 4, 4, 0, 2, 0	, 8, 7, 2, 5, 7, 4, 4, 0, 2, 0,
	6, 6, 4, 9, 1, 8, 1, 1, 8, 8	, 6, 6, 4, 9, 1, 8, 1, 1, 8, 8,
	3, 5, 2, 5, 5, 5, 1, 8, 3, 7	, 3, 5, 2, 5, 5, 5, 1, 8, 3, 7,
	8, 8, 1, 1, 5, 5, 1, 9, 7, 2	, 8, 8, 1, 1, 5, 5, 1, 9, 7, 2,
	2, 7, 2, 4, 4, 1, 0, 0, 0, 8	, 2, 7, 2, 4, 4, 1, 0, 0, 0, 8,
	7, 9, 4, 0, 0, 3, 5, 5, 1, 9	, 7, 9, 4, 0, 0, 3, 5, 5, 1, 9,
	5, 9, 3, 7, 5, 9, 0, 9, 8, 2	, 5, 9, 3, 7, 5, 9, 0, 9, 8, 2,
	7, 2, 0, 5, 2, 5, 1, 6, 0, 8	, 7, 2, 0, 5, 2, 5, 1, 6, 0, 8,
	5, 2, 4, 9, 0, 8, 3, 9, 1, 9	, 5, 2, 4, 9, 0, 8, 3, 9, 1, 9,
	9, 2, 5, 5, 3, 0, 5, 4, 4, 5	, 9, 2, 5, 5, 3, 0, 5, 4, 4, 5,
	3, 2, 0, 2, 4, 3, 5, 1, 9, 3	, 3, 2, 0, 2, 4, 3, 5, 1, 9, 3,
	0, 8, 1, 4, 4, 9, 9, 0, 9, 9	, 0, 8, 1, 4, 4, 9, 9, 0, 9, 9,
	1, 3, 0, 1, 1, 9, 6, 9, 2, 4	, 1, 3, 0, 1, 1, 9, 6, 9, 2, 4,
	4, 2, 5, 2, 3, 9, 6, 2, 3, 0	, 4, 2, 5, 2, 3, 9, 6, 2, 3, 0,
	8, 3, 2, 8, 8, 3, 0, 5, 1, 8	, 8, 3, 2, 8, 8, 3, 0, 5, 1, 8,
	8, 2, 9, 3, 7, 7, 4, 9, 6, 2	, 8, 2, 9, 3, 7, 7, 4, 9, 6, 2,
	0, 0, 6, 8, 4, 6, 7, 7, 8, 0	, 0, 0, 6, 8, 4, 6, 7, 7, 8, 0,
	7, 7, 5, 6, 5, 6, 2, 8, 3, 2	, 7, 7, 5, 6, 5, 6, 2, 8, 3, 2,
	7, 5, 7, 4, 0, 0, 2, 2, 6, 7	, 7, 5, 7, 4, 0, 0, 2, 2, 6, 7,
	8, 5, 9, 3, 3, 0, 6, 5, 4, 5	, 8, 5, 9, 3, 3, 0, 6, 5, 4, 5,
	9, 4, 1, 2, 9, 7, 6, 2, 0, 2	, 9, 4, 1, 2, 9, 7, 6, 2, 0, 2,
	3, 3, 8, 0, 1, 8, 4, 7, 1, 0	, 3, 3, 8, 0, 1, 8, 4, 7, 1, 0,
	6, 4, 1, 0, 4, 0, 4, 8, 9, 5	, 6, 4, 1, 0, 4, 0, 4, 8, 9, 5,
	1, 0, 5, 2, 4, 5, 6, 3, 5, 2	, 1, 0, 5, 2, 4, 5, 6, 3, 5, 2,
	2, 9, 6, 0, 2, 1, 2, 9, 7, 8	, 2, 9, 6, 0, 2, 1, 2, 9, 7, 8,
	3, 1, 6, 0, 2, 2, 7, 8, 9, 3	, 3, 1, 6, 0, 2, 2, 7, 8, 9, 3,
	4, 5, 7, 8, 4, 0, 7, 2, 8, 8	, 4, 5, 7, 8, 4, 0, 7, 2, 8, 8,
	0, 8, 8, 9, 3, 3, 5, 4, 9, 7	, 0, 8, 8, 9, 3, 3, 5, 4, 9, 7,
	9, 5, 3, 8, 6, 1, 0, 6, 4, 5	, 9, 5, 3, 8, 6, 1, 0, 6, 4, 5,
	1, 1, 5, 3, 8, 6, 1, 1, 1, 0	, 1, 1, 5, 3, 8, 6, 1, 1, 1, 0,
	1, 4, 9, 0, 1, 8, 0, 2, 7, 1	, 1, 4, 9, 0, 1, 8, 0, 2, 7, 1,

Test	Expected	Got
	5, 7, 6, 7, 7, 9, 5, 0, 9, 6,	5, 7, 6, 7, 7, 9, 5, 0, 9, 6,
	3, 7, 6, 6, 4, 6, 2, 9, 1, 5,	3, 7, 6, 6, 4, 6, 2, 9, 1, 5,
	0, 8, 6, 0, 8, 6, 3, 0, 3, 6,	0, 8, 6, 0, 8, 6, 3, 0, 3, 6,
	8, 5, 0, 1, 9, 9, 6, 3, 3, 2,	8, 5, 0, 1, 9, 9, 6, 3, 3, 2,
	9, 2, 0, 0, 5, 0, 4, 6, 7, 2,	9, 2, 0, 0, 5, 0, 4, 6, 7, 2,
	6, 5, 2, 8, 8, 7, 1, 0, 9, 7,	6, 5, 2, 8, 8, 7, 1, 0, 9, 7,
	7, 1, 5, 8, 7, 5, 7, 8, 7, 8,	7, 1, 5, 8, 7, 5, 7, 8, 7, 8,
	7, 1, 7, 9, 7, 1, 3, 0, 5, 5,	7, 1, 7, 9, 7, 1, 3, 0, 5, 5,
	1, 0, 2, 1, 0, 1, 5, 3, 7, 7,	1, 0, 2, 1, 0, 1, 5, 3, 7, 7,
	9, 6, 1, 6, 4, 8, 9, 8, 6, 0,	9, 6, 1, 6, 4, 8, 9, 8, 6, 0,
	0, 3, 6, 2, 3, 4, 9, 7, 4, 2,	0, 3, 6, 2, 3, 4, 9, 7, 4, 2,
	2, 9, 7, 7, 4, 9, 9, 7, 5, 6,	2, 9, 7, 7, 4, 9, 9, 7, 5, 6,
	2, 4, 0, 1, 9, 9, 8, 4, 6, 1,	2, 4, 0, 1, 9, 9, 8, 4, 6, 1,
	2, 9, 6, 7, 9, 4, 7, 5, 2, 9,	2, 9, 6, 7, 9, 4, 7, 5, 2, 9,
	4, 2, 5, 9, 4, 1, 6, 0, 0, 5,	4, 2, 5, 9, 4, 1, 6, 0, 0, 5,
	0, 0, 6, 1, 7, 8, 6, 9, 5, 4,	0, 0, 6, 1, 7, 8, 6, 9, 5, 4,
	7, 0, 5, 3, 2, 4, 9, 9, 2, 3,	7, 0, 5, 3, 2, 4, 9, 9, 2, 3,
	4, 4, 1, 8, 2, 4, 4, 6, 2, 0,	4, 4, 1, 8, 2, 4, 4, 6, 2, 0,
	5, 9, 4, 5, 8, 1, 8, 4, 7, 5,	5, 9, 4, 5, 8, 1, 8, 4, 7, 5,
	4, 9, 7, 3, 1, 7, 7, 5, 4, 5,	4, 9, 7, 3, 1, 7, 7, 5, 4, 5,
	6, 2, 1, 7, 5, 9, 7, 4, 8, 4,	6, 2, 1, 7, 5, 9, 7, 4, 8, 4,
	6, 9, 3, 4, 4, 3, 7, 1, 3, 9,	6, 9, 3, 4, 4, 3, 7, 1, 3, 9,
	3, 3, 7, 9, 7, 9, 4, 6, 0, 5,	3, 3, 7, 9, 7, 9, 4, 6, 0, 5,
	5, 5, 6, 2, 5, 5, 9, 0, 2, 9,	5, 5, 6, 2, 5, 5, 9, 0, 2, 9,
	0, 3, 8, 7, 6, 1, 0, 4, 0, 7,	0, 3, 8, 7, 6, 1, 0, 4, 0, 7,
	4, 2, 5, 0, 0, 6, 4, 3, 6, 0,	4, 2, 5, 0, 0, 6, 4, 3, 6, 0,
	9, 2, 4, 1, 0, 3, 8, 0, 1, 7,	9, 2, 4, 1, 0, 3, 8, 0, 1, 7,
	3, 8, 9, 0, 5, 3, 2, 8, 4, 0,	3, 8, 9, 0, 5, 3, 2, 8, 4, 0,
	4, 6, 9, 8, 6, 5, 2, 7, 9, 0,	4, 6, 9, 8, 6, 5, 2, 7, 9, 0,
	1, 7, 5, 5, 9, 5, 6, 8, 2, 8,	1, 7, 5, 5, 9, 5, 6, 8, 2, 8,
		6, 7, 4, 5, 9, 0, 2, 6, 8, 4, 3, 5, 9, 9, 1, 0, 3, 2, 3, 8,
	1, 0, 5, 9, 6, 8, 9, 0, 9, 9,	1, 0, 5, 9, 6, 8, 9, 0, 9, 9,
	4, 7, 5, 1, 7, 0, 3, 8, 9, 9,	4, 7, 5, 1, 7, 0, 3, 8, 9, 9,
	1, 0, 3, 0, 4, 2, 6, 6, 9, 1,	1, 0, 3, 0, 4, 2, 6, 6, 9, 1,
	2, 5, 2, 3, 5, 1, 5, 0, 1, 6,	2, 5, 2, 3, 5, 1, 5, 0, 1, 6,

Test	Expected	Got
	4, 8, 8, 4, 9, 5, 6,	5, 4, 2, 4, 8, 8, 4, 9, 5, 6, 5, 4, 2,
	5, 9, 7, 3, 0, 6, 6,	8, 8, 7, 5, 9, 7, 3, 0, 6, 6, 8, 8, 7,
	1, 0, 5, 3, 5, 5, 9,	4, 8, 4, 1, 0, 5, 3, 5, 5, 9, 4, 8, 4,
	6, 9, 3, 8, 3, 4, 9,	6, 8, 9, 6, 9, 3, 8, 3, 4, 9, 6, 8, 9,
	7, 3, 4, 1, 0, 1, 2,	0, 0, 8, 7, 3, 4, 1, 0, 1, 2, 0, 0, 8,
	1, 8, 5, 1, 5, 1, 0,	1, 1, 4, 1, 8, 5, 1, 5, 1, 0, 1, 1, 4,
	0, 8, 7, 2, 8, 0, 0,	9, 6, 2, 0, 8, 7, 2, 8, 0, 0, 9, 6, 2,
	1, 5, 1, 3, 4, 2, 5,	2, 0, 2, 1, 5, 1, 3, 4, 2, 5, 2, 0, 2,
	5, 8, 1, 1, 6, 4, 6,	5, 8, 5, 5, 8, 1, 1, 6, 4, 6, 5, 8, 5,
	9, 5, 8, 1, 8, 5, 4,	2, 0, 5, 9, 5, 8, 1, 8, 5, 4, 2, 0, 5,
	5, 0, 1, 9, 7, 1, 1,	7, 6, 1, 5, 0, 1, 9, 7, 1, 1, 7, 6, 1,
	8, 8, 4, 6, 4, 4, 3,	1, 0, 3, 8, 8, 4, 6, 4, 4, 3, 1, 0, 3,
	3, 7, 9, 7, 9, 5, 1,	5, 1, 5, 3, 7, 9, 7, 9, 5, 1, 5, 1, 5,
	2, 0, 3, 1, 4, 9, 2,	6, 5, 3, 2, 0, 3, 1, 4, 9, 2, 6, 5, 3,
	2, 7, 8, 1, 6, 7, 0,	2, 7, 6, 2, 7, 8, 1, 6, 7, 0, 2, 7, 6,
	1, 5, 8, 3, 5, 0, 4,	7, 9, 8, 1, 5, 8, 3, 5, 0, 4, 7, 9, 8,
	8, 2, 6, 9, 9, 7, 8,	3, 8, 8, 8, 2, 6, 9, 9, 7, 8, 3, 8, 8,
	0, 8, 6, 4, 5, 7, 2,	0, 7, 3, 0, 8, 6, 4, 5, 7, 2, 0, 7, 3,
	5, 5, 3, 5, 6, 2, 3,	3, 1, 2, 5, 5, 3, 5, 6, 2, 3, 3, 1, 2,
	4, 4, 4, 5, 5, 4, 9,	7, 0, 8, 4, 4, 4, 5, 5, 4, 9, 7, 0, 8,
	0, 4, 3, 0, 9, 7, 7,	8, 1, 3, 0, 4, 3, 0, 9, 7, 7, 8, 1, 3,
	7, 1, 5, 4, 7]	7, 1, 5, 4, 7]

	Test	Expected	Got
~	int arr[] = {3, 1, 6, 8, 6, 6, 1, 5, 7, 1, 7, 6, 7,	[3, 1, 6, 8, 6, 6, 1, 5, 7, 1,	[3, 1, 6, 8, 6, 6, 1, 5, 7, 1,
	1, 9, 6, 8, 9, 7, 6, 4, 0, 3, 8, 9, 4, 7, 1, 1, 6,	7, 6, 7, 1, 9, 6, 8, 9, 7, 6,	7, 6, 7, 1, 9, 6, 8, 9, 7, 6,
	9, 3, 8, 8, 0, 4, 9, 7, 4, 7, 6, 3, 4, 9, 9, 6, 4,	4, 0, 3, 8, 9, 4, 7, 1, 1, 6,	4, 0, 3, 8, 9, 4, 7, 1, 1, 6,
	1, 1, 4, 8, 8, 1, 6, 5, 2, 8, 5, 3, 9, 0, 8, 9, 1,	9, 3, 8, 8, 0, 4, 9, 7, 4, 7,	9, 3, 8, 8, 0, 4, 9, 7, 4, 7,
	6, 9, 3, 9, 6, 9, 9, 9, 3, 8, 8, 3, 0, 7, 8, 9, 1,	6, 3, 4, 9, 9, 6, 4, 1, 1, 4,	6, 3, 4, 9, 9, 6, 4, 1, 1, 4,
	9, 2, 5, 6, 4, 3, 1, 9, 1, 0, 0, 8, 2, 1, 7, 7, 3,	8, 8, 1, 6, 5, 2, 8, 5, 3, 9,	8, 8, 1, 6, 5, 2, 8, 5, 3, 9,
	3, 5, 6, 0, 5, 5, 6, 9, 7, 0, 9, 4, 5, 8, 6, 5, 1,	0, 8, 9, 1, 6, 9, 3, 9, 6, 9,	0, 8, 9, 1, 6, 9, 3, 9, 6, 9,
	3, 4, 7, 4, 4, 6, 6, 9, 8, 2, 4, 1, 0, 6, 0, 6, 0,	9, 9, 3, 8, 8, 3, 0, 7, 8, 9,	9, 9, 3, 8, 8, 3, 0, 7, 8, 9,
	6, 2, 4, 5, 6, 5, 6, 2, 1, 1, 6, 4, 0, 6, 8, 7, 3,	1, 9, 2, 5, 6, 4, 3, 1, 9, 1,	1, 9, 2, 5, 6, 4, 3, 1, 9, 1,
	9, 6, 2, 6, 9, 3, 6, 0, 6, 2, 2, 3, 5, 0, 5, 6, 5,	0, 0, 8, 2, 1, 7, 7, 3, 3, 5,	0, 0, 8, 2, 1, 7, 7, 3, 3, 5,
	1, 4, 0, 8, 9, 4, 3, 1, 9, 6, 3, 0, 0, 2, 0, 8, 8,	6, 0, 5, 5, 6, 9, 7, 0, 9, 4,	6, 0, 5, 5, 6, 9, 7, 0, 9, 4,
	2, 1, 1, 8, 0, 0, 9, 2, 9, 7, 3, 3, 9, 8, 6, 4, 7,	5, 8, 6, 5, 1, 3, 4, 7, 4, 4,	5, 8, 6, 5, 1, 3, 4, 7, 4, 4,
	7, 4, 7, 4, 8, 3, 9, 3, 0, 7, 0, 2, 0, 6, 4, 1, 2,	6, 6, 9, 8, 2, 4, 1, 0, 6, 0,	6, 6, 9, 8, 2, 4, 1, 0, 6, 0,
	2, 1, 4, 4, 7, 7, 0, 9, 4, 4, 6, 3, 8, 6, 4, 2, 8,	6, 0, 6, 2, 4, 5, 6, 5, 6, 2,	6, 0, 6, 2, 4, 5, 6, 5, 6, 2,
	2, 8, 9, 1, 7, 1, 4, 2, 9, 7, 8, 3, 4, 5, 7, 5, 0,	1, 1, 6, 4, 0, 6, 8, 7, 3, 9,	1, 1, 6, 4, 0, 6, 8, 7, 3, 9,
	0, 1, 8, 9, 7, 8, 1, 4, 2, 9, 3, 9, 1, 4, 2, 1, 1,	6, 2, 6, 9, 3, 6, 0, 6, 2, 2,	6, 2, 6, 9, 3, 6, 0, 6, 2, 2,
	3, 6, 1, 4, 2, 1, 5, 9, 9, 9, 2, 0, 3, 2, 5, 7, 5,	3, 5, 0, 5, 6, 5, 1, 4, 0, 8,	3, 5, 0, 5, 6, 5, 1, 4, 0, 8,
	4, 8, 0, 1, 7, 5, 2, 5, 2, 2, 1, 2, 8, 2, 9, 7, 7,	9, 4, 3, 1, 9, 6, 3, 0, 0, 2,	9, 4, 3, 1, 9, 6, 3, 0, 0, 2,
	7, 6, 6, 8, 3, 8, 2, 0, 8, 1, 9, 1, 6, 8, 6, 6, 6,	0, 8, 8, 2, 1, 1, 8, 0, 0, 9,	0, 8, 8, 2, 1, 1, 8, 0, 0, 9,
	4, 3, 0, 6, 8, 7, 0, 5, 0, 0, 2, 8, 6, 7, 0, 4, 0,	2, 9, 7, 3, 3, 9, 8, 6, 4, 7,	2, 9, 7, 3, 3, 9, 8, 6, 4, 7,
	3, 1, 9, 9, 4, 6, 7, 0, 8, 4, 1, 0, 8, 0, 7, 7, 1,	7, 4, 7, 4, 8, 3, 9, 3, 0, 7,	7, 4, 7, 4, 8, 3, 9, 3, 0, 7,
	0, 7, 2, 5, 7, 5, 2, 9, 5, 3, 1, 8, 2, 8, 3, 4, 9,	0, 2, 0, 6, 4, 1, 2, 2, 1, 4,	0, 2, 0, 6, 4, 1, 2, 2, 1, 4,
	3, 9, 3, 5, 6, 9, 9, 0, 9, 6, 3, 7, 8, 6, 1, 2, 2,	4, 7, 7, 0, 9, 4, 4, 6, 3, 8,	4, 7, 7, 0, 9, 4, 4, 6, 3, 8,
	3, 8, 2, 4, 5, 0, 5, 8, 3, 2, 8, 6, 9, 0, 5, 7, 4,	6, 4, 2, 8, 2, 8, 9, 1, 7, 1,	6, 4, 2, 8, 2, 8, 9, 1, 7, 1,
	2, 2, 9, 9, 2, 7, 0, 5, 0, 8, 7, 1, 6, 3, 3, 7, 9,	4, 2, 9, 7, 8, 3, 4, 5, 7, 5,	4, 2, 9, 7, 8, 3, 4, 5, 7, 5,
	9, 9, 8, 6, 9, 9, 8, 9, 2, 8, 6, 4, 2, 1, 6, 6, 0,	0, 0, 1, 8, 9, 7, 8, 1, 4, 2,	0, 0, 1, 8, 9, 7, 8, 1, 4, 2,
	9, 8, 2, 1, 9, 4, 7, 7, 9, 6, 7, 0, 6, 6, 6, 7, 0,	9, 3, 9, 1, 4, 2, 1, 1, 3, 6,	9, 3, 9, 1, 4, 2, 1, 1, 3, 6,
	2, 6, 2, 3, 4, 0, 8, 1, 8, 4, 8, 3, 8, 6, 8, 6, 5,	1, 4, 2, 1, 5, 9, 9, 9, 2, 0,	1, 4, 2, 1, 5, 9, 9, 9, 2, 0,
	9, 5, 9, 8, 9, 1, 1, 6, 7, 6, 1, 1, 3, 9, 3, 4, 1,	3, 2, 5, 7, 5, 4, 8, 0, 1, 7,	3, 2, 5, 7, 5, 4, 8, 0, 1, 7,
	6, 8, 5, 6, 9, 9, 0, 9, 7, 3, 4, 7, 4, 0, 6, 6, 0,	5, 2, 5, 2, 2, 1, 2, 8, 2, 9,	5, 2, 5, 2, 2, 1, 2, 8, 2, 9,
	6, 6, 3, 1, 9, 3, 9, 1, 2, 0, 3, 5, 4, 5, 8, 2, 0,	7, 7, 7, 6, 6, 8, 3, 8, 2, 0,	7, 7, 7, 6, 6, 8, 3, 8, 2, 0,
	5, 3, 2, 2, 0, 9, 8, 3, 8, 0, 6, 3, 3, 5, 6, 8, 6,	8, 1, 9, 1, 6, 8, 6, 6, 6, 4,	8, 1, 9, 1, 6, 8, 6, 6, 6, 4,
	2, 9, 9, 1, 0, 9, 6, 4, 6, 4, 1, 6, 5, 7, 1, 2, 2,	3, 0, 6, 8, 7, 0, 5, 0, 0, 2,	3, 0, 6, 8, 7, 0, 5, 0, 0, 2,
	8, 6, 6, 8, 2, 0, 3, 4, 7, 7, 3, 3, 2, 3, 4, 5, 2,	8, 6, 7, 0, 4, 0, 3, 1, 9, 9,	8, 6, 7, 0, 4, 0, 3, 1, 9, 9,
	8, 7, 1, 7, 7, 7, 9, 7, 0, 4, 7, 9, 5, 2, 7, 5, 6,	4, 6, 7, 0, 8, 4, 1, 0, 8, 0,	4, 6, 7, 0, 8, 4, 1, 0, 8, 0,
	1, 5, 3, 4, 3, 8, 8, 3, 8, 9, 9, 3, 7, 7, 7, 9, 3,	7, 7, 1, 0, 7, 2, 5, 7, 5, 2,	7, 7, 1, 0, 7, 2, 5, 7, 5, 2,

Test	Expected	Got
7, 8, 6, 5, 7, 2, 9, 4, 0, 9, 6, 0, 4, 2, 0, 6, 3,	9, 5, 3, 1, 8, 2, 8, 3, 4, 9,	9, 5, 3, 1, 8, 2, 8, 3, 4, 9,
8, 7, 4, 3, 8, 9, 8, 1, 1, 1, 6, 9, 8, 4, 5, 2, 8,	3, 9, 3, 5, 6, 9, 9, 0, 9, 6,	3, 9, 3, 5, 6, 9, 9, 0, 9, 6,
2, 3, 3, 6, 5, 5, 8, 2, 6, 5, 0, 4, 9, 9, 7, 6, 3,	3, 7, 8, 6, 1, 2, 2, 3, 8, 2,	3, 7, 8, 6, 1, 2, 2, 3, 8, 2,
1, 7, 5, 0, 0, 4, 9, 6, 0, 4, 6, 0, 8, 5, 6, 5, 3,	4, 5, 0, 5, 8, 3, 2, 8, 6, 9,	4, 5, 0, 5, 8, 3, 2, 8, 6, 9,
8, 0, 4, 5, 6, 2, 8, 6, 0, 3, 9, 6, 2, 1, 4, 7, 3,	0, 5, 7, 4, 2, 2, 9, 9, 2, 7,	0, 5, 7, 4, 2, 2, 9, 9, 2, 7,
3, 3, 8, 6, 1, 0, 7, 8, 2, 9, 0, 6, 3, 3, 5, 5, 0,	0, 5, 0, 8, 7, 1, 6, 3, 3, 7,	0, 5, 0, 8, 7, 1, 6, 3, 3, 7,
8, 4, 7, 4, 4, 5, 9, 2, 7, 7, 8, 8, 8, 0, 8, 8, 0,	9, 9, 9, 8, 6, 9, 9, 8, 9, 2,	9, 9, 9, 8, 6, 9, 9, 8, 9, 2,
4, 8, 4, 4, 7, 6, 2, 5, 2, 7, 3, 7, 0, 9, 8, 1, 5,	8, 6, 4, 2, 1, 6, 6, 0, 9, 8,	8, 6, 4, 2, 1, 6, 6, 0, 9, 8,
0, 3, 8, 4, 0, 7, 5, 0, 5, 4, 5, 4, 9, 6, 3, 5, 8,	2, 1, 9, 4, 7, 7, 9, 6, 7, 0,	2, 1, 9, 4, 7, 7, 9, 6, 7, 0,
1, 0, 8, 0, 8, 2, 6, 5, 3, 4, 8, 8, 9, 5, 3, 8, 1,	6, 6, 6, 7, 0, 2, 6, 2, 3, 4,	6, 6, 6, 7, 0, 2, 6, 2, 3, 4,
0, 2, 9, 9, 9, 1, 0, 1, 4, 9, 7, 1, 8, 4, 5, 2, 6,	0, 8, 1, 8, 4, 8, 3, 8, 6, 8,	0, 8, 1, 8, 4, 8, 3, 8, 6, 8,
2, 4, 1, 6, 4, 7, 4, 0, 3, 3, 2, 4, 7, 9, 0, 6, 2,	6, 5, 9, 5, 9, 8, 9, 1, 1, 6,	6, 5, 9, 5, 9, 8, 9, 1, 1, 6,
2, 7, 4, 6, 7, 2, 5, 7, 7, 5, 7, 5, 4, 8, 4, 1, 7,	7, 6, 1, 1, 3, 9, 3, 4, 1, 6,	7, 6, 1, 1, 3, 9, 3, 4, 1, 6,
4, 5, 9, 9, 8, 8, 4, 5, 6, 6, 3, 3, 7, 6, 1, 6, 7,	8, 5, 6, 9, 9, 0, 9, 7, 3, 4,	8, 5, 6, 9, 9, 0, 9, 7, 3, 4,
9, 9, 5, 4, 0, 7, 0, 4, 5, 8, 2, 8, 8, 1, 2, 0, 9,	7, 4, 0, 6, 6, 0, 6, 6, 3, 1,	7, 4, 0, 6, 6, 0, 6, 6, 3, 1,
1, 8, 1, 8, 4, 7, 3, 1, 1, 2, 3, 0, 4, 7, 5, 4, 4,	9, 3, 9, 1, 2, 0, 3, 5, 4, 5,	9, 3, 9, 1, 2, 0, 3, 5, 4, 5,
3, 5, 4, 6, 6, 0, 3, 7, 4, 4, 5, 7, 7, 3, 9, 1, 8,	8, 2, 0, 5, 3, 2, 2, 0, 9, 8,	8, 2, 0, 5, 3, 2, 2, 0, 9, 8,
0, 0, 5, 0, 9, 8, 3, 3, 3, 6, 6, 6, 6, 2, 5, 8, 1,	3, 8, 0, 6, 3, 3, 5, 6, 8, 6,	3, 8, 0, 6, 3, 3, 5, 6, 8, 6,
5, 2, 8, 2, 1, 4, 6, 2, 5, 8, 2, 9, 3, 9, 4, 8, 2,	2, 9, 9, 1, 0, 9, 6, 4, 6, 4,	2, 9, 9, 1, 0, 9, 6, 4, 6, 4,
1, 3, 6, 7, 9, 3, 9, 3, 6, 8, 8, 7, 1, 5, 3, 7, 1,	1, 6, 5, 7, 1, 2, 2, 8, 6, 6,	1, 6, 5, 7, 1, 2, 2, 8, 6, 6,
3, 7, 0, 1, 7, 0, 9, 6, 2, 8, 0, 1, 8, 6, 6, 4, 5,	8, 2, 0, 3, 4, 7, 7, 3, 3, 2,	8, 2, 0, 3, 4, 7, 7, 3, 3, 2,
1, 3, 3, 9, 1, 1, 9, 6, 9, 9, 5, 2, 2, 2, 2, 8, 2,	3, 4, 5, 2, 8, 7, 1, 7, 7, 7,	3, 4, 5, 2, 8, 7, 1, 7, 7, 7,
4, 4, 1, 9, 8, 3, 7, 4, 3, 4, 3, 5, 2, 8, 4, 0, 9,	9, 7, 0, 4, 7, 9, 5, 2, 7, 5,	9, 7, 0, 4, 7, 9, 5, 2, 7, 5,
9, 0, 5, 6, 0, 1, 9, 0, 5, 6, 7, 7, 5, 4, 7, 3, 5,	6, 1, 5, 3, 4, 3, 8, 8, 3, 8,	6, 1, 5, 3, 4, 3, 8, 8, 3, 8,
0, 3, 2, 2, 2, 9, 0, 0, 6, 1, 9, 1, 7, 1, 3, 4, 6,	9, 9, 3, 7, 7, 7, 9, 3, 7, 8,	9, 9, 3, 7, 7, 7, 9, 3, 7, 8,
9, 6, 1, 3, 7, 4, 5, 7, 2, 6, 8, 2, 8, 5, 0, 5, 6,	6, 5, 7, 2, 9, 4, 0, 9, 6, 0,	6, 5, 7, 2, 9, 4, 0, 9, 6, 0,
1, 7, 0, 3, 1, 5, 4, 8, 3, 7, 8, 4, 1, 7, 1, 3, 3,	4, 2, 0, 6, 3, 8, 7, 4, 3, 8,	4, 2, 0, 6, 3, 8, 7, 4, 3, 8,
8, 9, 0, 1, 4, 2, 1, 3, 8, 3, 0, 8, 9, 1, 3, 3, 8,	9, 8, 1, 1, 1, 6, 9, 8, 4, 5,	9, 8, 1, 1, 1, 6, 9, 8, 4, 5,
4, 6, 3, 2, 8, 9, 1, 2, 3, 8, 4, 4, 6, 1, 9, 9, 1,	2, 8, 2, 3, 3, 6, 5, 5, 8, 2,	2, 8, 2, 3, 3, 6, 5, 5, 8, 2,
0, 1, 0, 7, 8, 7, 5, 8, 2, 4, 3, 1, 0, 0, 8, 1, 2,	6, 5, 0, 4, 9, 9, 7, 6, 3, 1,	6, 5, 0, 4, 9, 9, 7, 6, 3, 1,
9, 7, 4, 7, 4, 6, 5, 5, 1, 1, 3, 7, 8, 9, 6, 3, 0,	7, 5, 0, 0, 4, 9, 6, 0, 4, 6,	7, 5, 0, 0, 4, 9, 6, 0, 4, 6,
9, 7, 9, 6, 1, 2, 7, 2, 1, 2, 8, 0, 1, 2, 7, 3, 4,	0, 8, 5, 6, 5, 3, 8, 0, 4, 5,	0, 8, 5, 6, 5, 3, 8, 0, 4, 5,
3, 6, 8, 7, 1, 7, 6, 7, 9, 5, 7, 2, 8, 1, 1, 8, 7,	6, 2, 8, 6, 0, 3, 9, 6, 2, 1,	6, 2, 8, 6, 0, 3, 9, 6, 2, 1,
4, 6, 5, 7, 7, 0, 3, 8, 0, 5, 3, 6, 1, 0, 0, 5, 5,	4, 7, 3, 3, 3, 8, 6, 1, 0, 7,	4, 7, 3, 3, 3, 8, 6, 1, 0, 7,
9, 8, 9, 2, 2, 0, 5, 0, 9, 4, 4, 6, 8, 5, 9, 7, 1,	8, 2, 9, 0, 6, 3, 3, 5, 5, 0,	8, 2, 9, 0, 6, 3, 3, 5, 5, 0,
4, 6, 4, 5, 1, 5, 2, 2, 7, 3, 6, 4, 9, 2, 9, 7, 8,	8, 4, 7, 4, 4, 5, 9, 2, 7, 7,	8, 4, 7, 4, 4, 5, 9, 2, 7, 7,

Test	Expected	Got
1, 5, 5, 8, 4, 5, 6, 4, 1, 1, 8, 0, 6, 8, 9, 4, 8,	8, 8, 8, 0, 8, 8, 0, 4, 8, 4,	8, 8, 8, 0, 8, 8, 0, 4, 8, 4,
4, 2, 4, 0, 1, 3, 7, 6, 5, 7, 8, 3, 6, 8, 7, 8, 3,	4, 7, 6, 2, 5, 2, 7, 3, 7, 0,	4, 7, 6, 2, 5, 2, 7, 3, 7, 0,
3, 8, 9, 9, 9, 1, 0, 3, 0, 2, 0, 3, 7, 1, 2, 1, 1,	9, 8, 1, 5, 0, 3, 8, 4, 0, 7,	9, 8, 1, 5, 0, 3, 8, 4, 0, 7,
6, 5, 0, 2, 6, 8, 7, 5, 0, 7, 1, 7, 7, 0, 5, 2, 2,	5, 0, 5, 4, 5, 4, 9, 6, 3, 5,	5, 0, 5, 4, 5, 4, 9, 6, 3, 5,
2, 8, 6, 9, 4, 7, 7, 7, 0, 0, 4, 9, 7, 5, 8, 5, 5,	8, 1, 0, 8, 0, 8, 2, 6, 5, 3,	8, 1, 0, 8, 0, 8, 2, 6, 5, 3,
4, 5, 2, 2, 4, 2, 0, 2, 5, 3, 1, 2, 3, 6, 8, 0, 0,	4, 8, 8, 9, 5, 3, 8, 1, 0, 2,	4, 8, 8, 9, 5, 3, 8, 1, 0, 2,
3, 4, 5, 2, 8,snip, 9, 9, 4, 2, 9, 7, 8,	9, 9, 9, 1, 0, 1, 4, 9, 7, 1,	9, 9, 9, 1, 0, 1, 4, 9, 7, 1,
4, 4, 9, 7, 4, 0, 8, 3, 2, 8, 0, 8, 7, 1, 9, 4, 2,	8, 4, 5, 2, 6, 2, 4, 1, 6, 4,	8, 4, 5, 2, 6, 2, 4, 1, 6, 4,
5, 1, 2, 3, 9, 1, 2, 6, 0, 5, 0, 9, 1, 6, 7, 6, 6,	7, 4, 0, 3, 3, 2, 4, 7, 9, 0,	7, 4, 0, 3, 3, 2, 4, 7, 9, 0,
5, 1, 3, 8, 4, 1, 6, 7, 6, 3, 4, 3, 5, 1, 8, 0, 8,	6, 2, 2, 7, 4, 6, 7, 2, 5, 7,	6, 2, 2, 7, 4, 6, 7, 2, 5, 7,
2, 7, 2, 9, 4, 4, 5, 7, 0, 7, 6, 5, 3, 4, 1, 0, 4,	7, 5, 7, 5, 4, 8, 4, 1, 7, 4,	7, 5, 7, 5, 4, 8, 4, 1, 7, 4,
3, 2, 2, 0, 6, 4, 4, 0, 9, 8, 6, 5, 1, 8, 3, 9, 9,	5, 9, 9, 8, 8, 4, 5, 6, 6, 3,	5, 9, 9, 8, 8, 4, 5, 6, 6, 3,
4, 9, 5, 6, 2, 4, 8, 6, 7, 9, 2, 7, 7, 5, 4, 6, 2,	3, 7, 6, 1, 6, 7, 9, 9, 5, 4,	3, 7, 6, 1, 6, 7, 9, 9, 5, 4,
0, 6, 2, 3, 7, 8, 8, 0, 7, 8, 2, 9, 7, 2, 1, 4, 4,	0, 7, 0, 4, 5, 8, 2, 8, 8, 1,	0, 7, 0, 4, 5, 8, 2, 8, 8, 1,
8, 2, 0, 1, 9, 6, 5, 7, 5, 9, 6, 4, 4, 0, 7, 9, 7,	2, 0, 9, 1, 8, 1, 8, 4, 7, 3,	2, 0, 9, 1, 8, 1, 8, 4, 7, 3,
0, 9, 1, 6, 5, 2, 6, 2, 1, 7, 7, 5, 0, 9, 5, 0, 6,	1, 1, 2, 3, 0, 4, 7, 5, 4, 4,	1, 1, 2, 3, 0, 4, 7, 5, 4, 4,
2, 9, 0, 1, 4, 5, 4, 5, 7, 8, 9, 6, 7, 7, 4, 2, 7,	3, 5, 4, 6, 6, 0, 3, 7, 4, 4,	3, 5, 4, 6, 6, 0, 3, 7, 4, 4,
1, 0, 9, 2, 0, 8, 2, 9, 2, 9, 1, 4, 7, 2, 6, 6, 7,	5, 7, 7, 3, 9, 1, 8, 0, 0, 5,	5, 7, 7, 3, 9, 1, 8, 0, 0, 5,
4, 4, 4, 8, 5, 3, 7, 2, 7, 5, 2, 3, 0, 7, 5, 9, 8,	0, 9, 8, 3, 3, 3, 6, 6, 6, 6,	0, 9, 8, 3, 3, 6, 6, 6, 6,
1, 2, 8, 1, 4, 0, 4, 7, 0, 0, 3, 7, 0, 6, 6, 3, 3,	2, 5, 8, 1, 5, 2, 8, 2, 1, 4,	2, 5, 8, 1, 5, 2, 8, 2, 1, 4,
7, 0, 4, 7, 4, 3, 9, 3, 2, 1, 2, 1, 9, 4, 1, 3, 9,	6, 2, 5, 8, 2, 9, 3, 9, 4, 8,	6, 2, 5, 8, 2, 9, 3, 9, 4, 8,
7, 6, 1, 4, 2, 5, 0, 1, 8, 7, 4, 2, 6, 7, 1, 8, 8,	2, 1, 3, 6, 7, 9, 3, 9, 3, 6,	2, 1, 3, 6, 7, 9, 3, 9, 3, 6,
6, 7, 4, 0, 9, 5, 6, 2, 8, 5, 4, 8, 1, 6, 7, 2, 4,	8, 8, 7, 1, 5, 3, 7, 1, 3, 7,	8, 8, 7, 1, 5, 3, 7, 1, 3, 7,
5, 1, 9, 7, 9, 9, 5, 2, 7, 3, 2, 2, 5, 8, 2, 2, 3,	0, 1, 7, 0, 9, 6, 2, 8, 0, 1,	0, 1, 7, 0, 9, 6, 2, 8, 0, 1,
9, 6, 2, 1, 7, 7, 4, 8, 6, 3, 4, 8, 4, 9, 7, 8, 4,	8, 6, 6, 4, 5, 1, 3, 3, 9, 1,	8, 6, 6, 4, 5, 1, 3, 3, 9, 1,
8, 2, 5, 8, 0, 5, 5, 7, 0, 0, 5, 3, 7, 0, 9, 1, 5,	1, 9, 6, 9, 9, 5, 2, 2, 2, 2,	1, 9, 6, 9, 9, 5, 2, 2, 2, 2,
1, 1, 5, 3, 0, 4, 5, 7, 8, 1, 3, 9, 5, 7, 1, 8, 1,	8, 2, 4, 4, 1, 9, 8, 3, 7, 4,	8, 2, 4, 4, 1, 9, 8, 3, 7, 4,
0, 1, 8, 7, 1, 0, 9, 1, 1, 5, 0, 8, 9, 0, 6, 4, 5,	3, 4, 3, 5, 2, 8, 4, 0, 9, 9,	3, 4, 3, 5, 2, 8, 4, 0, 9, 9,
2, 1, 8, 5, 6, 7, 6, 7, 3, 0, 1, 6, 8, 6, 5, 4, 6,	0, 5, 6, 0, 1, 9, 0, 5, 6, 7,	0, 5, 6, 0, 1, 9, 0, 5, 6, 7,
4, 6, 8, 7, 3, 9, 3, 2, 4, 2, 8, 0, 3, 8, 3, 8, 7,	7, 5, 4, 7, 3, 5, 0, 3, 2, 2,	7, 5, 4, 7, 3, 5, 0, 3, 2, 2,
6, 1, 7, 5, 2, 2, 0, 0, 8, 9, 6, 9, 3, 3, 9, 3, 3,	2, 9, 0, 0, 6, 1, 9, 1, 7, 1,	2, 9, 0, 0, 6, 1, 9, 1, 7, 1,
9, 1, 3, 4, 9, 2, 6, 3, 0, 5, 3, 0, 5, 8, 6, 0, 6,	3, 4, 6, 9, 6, 1, 3, 7, 4, 5,	3, 4, 6, 9, 6, 1, 3, 7, 4, 5,
7, 4, 3, 0, 2, 0, 2, 3, 7, 8, 1, 1, 3, 8, 7, 9, 4,	7, 2, 6, 8, 2, 8, 5, 0, 5, 6,	7, 2, 6, 8, 2, 8, 5, 0, 5, 6,
6, 2, 0, 4, 6, 1, 9, 7, 8, 0, 3, 2, 5, 0, 2, 4, 1,	1, 7, 0, 3, 1, 5, 4, 8, 3, 7,	1, 7, 0, 3, 1, 5, 4, 8, 3, 7,
0, 4, 5, 2, 8, 8, 5, 8, 3, 4, 9, 4, 6, 8, 2, 2, 8,	8, 4, 1, 7, 1, 3, 3, 8, 9, 0,	8, 4, 1, 7, 1, 3, 3, 8, 9, 0,
1, 1, 1, 6, 9, 6, 1, 3, 6, 4, 9, 4, 5, 4, 0, 4, 2,	1, 4, 2, 1, 3, 8, 3, 0, 8, 9,	1, 4, 2, 1, 3, 8, 3, 0, 8, 9,

Test	Expected	Got
9, 6, 5, 2, 3, 3, 6, 3, 5, 8, 6, 3, 8, 2, 3, 8, 1,	1, 3, 3, 8, 4, 6, 3, 2, 8, 9,	1, 3, 3, 8, 4, 6, 3, 2, 8, 9,
6, 5, 8, 9, 7, 6, 2, 5, 8, 6, 2, 2, 1, 1, 7, 9, 0,	1, 2, 3, 8, 4, 4, 6, 1, 9, 9,	1, 2, 3, 8, 4, 4, 6, 1, 9, 9,
9, 7, 2, 4, 3, 4, 1, 4, 0, 4, 4, 6, 8, 6, 8, 8, 9,	1, 0, 1, 0, 7, 8, 7, 5, 8, 2,	1, 0, 1, 0, 7, 8, 7, 5, 8, 2,
2, 9, 4, 3, 3, 0, 0, 6, 1, 2, 3, 9, 2, 4, 9, 1, 9,	4, 3, 1, 0, 0, 8, 1, 2, 9, 7,	4, 3, 1, 0, 0, 8, 1, 2, 9, 7,
2, 0, 8, 9, 0, 1, 0, 0, 6, 5, 7, 3, 9, 0, 2, 3, 8,	4, 7, 4, 6, 5, 5, 1, 1, 3, 7,	4, 7, 4, 6, 5, 5, 1, 1, 3, 7,
3, 2, 9, 1, 3, 8, 2, 4, 5, 2, 5, 6, 1, 4, 7, 1, 2,	8, 9, 6, 3, 0, 9, 7, 9, 6, 1,	8, 9, 6, 3, 0, 9, 7, 9, 6, 1,
2, 4, 2, 8, 2, 1, 0, 5, 7, 7, 8, 5, 2, 2, 4, 4, 2,	2, 7, 2, 1, 2, 8, 0, 1, 2, 7,	2, 7, 2, 1, 2, 8, 0, 1, 2, 7,
6, 6, 7, 3, 9, 1, 9, 2, 2, 1, 3, 4, 0, 7, 9, 2, 9,	3, 4, 3, 6, 8, 7, 1, 7, 6, 7,	3, 4, 3, 6, 8, 7, 1, 7, 6, 7,
1, 0, 4, 6, 9, 5, 0, 2, 5, 8, 6, 8, 0, 6, 4, 6, 3,	9, 5, 7, 2, 8, 1, 1, 8, 7, 4,	9, 5, 7, 2, 8, 1, 1, 8, 7, 4,
5, 6, 2, 1, 3, 5, 7, 7, 7, 8, 0, 4, 8, 6, 4, 4, 6,	6, 5, 7, 7, 0, 3, 8, 0, 5, 3,	6, 5, 7, 7, 0, 3, 8, 0, 5, 3,
1, 6, 9, 0, 0, 8, 3, 6, 4, 1, 8, 5, 9, 1, 4, 5, 1,	6, 1, 0, 0, 5, 5, 9, 8, 9, 2,	6, 1, 0, 0, 5, 5, 9, 8, 9, 2,
9, 4, 2, 3, 0, 7, 8, 1, 0, 9, 8, 7, 5, 9, 3, 5, 7,	2, 0, 5, 0, 9, 4, 4, 6, 8, 5,	2, 0, 5, 0, 9, 4, 4, 6, 8, 5,
6, 7, 3, 2, 4, 6, 2, 6, 8, 8, 7, 5, 5, 4, 6, 4, 3,	9, 7, 1, 4, 6, 4, 5, 1, 5, 2,	9, 7, 1, 4, 6, 4, 5, 1, 5, 2,
4, 4, 4, 8, 7, 3, 4, 1, 3, 8, 1, 4, 4, 7, 8, 6, 9,	2, 7, 3, 6, 4, 9, 2, 9, 7, 8,	2, 7, 3, 6, 4, 9, 2, 9, 7, 8,
6, 8, 2, 4, 6, 7, 5, 0, 6, 1, 0, 9, 7, 7, 8, 0, 0,	1, 5, 5, 8, 4, 5, 6, 4, 1, 1,	1, 5, 5, 8, 4, 5, 6, 4, 1, 1,
3, 4, 9, 4, 6, 6, 8, 7, 2, 4, 4, 4, 9, 3, 2, 1, 3,	8, 0, 6, 8, 9, 4, 8, 4, 2, 4,	8, 0, 6, 8, 9, 4, 8, 4, 2, 4,
6, 1, 1, 6, 1, 9, 2, 5, 7, 7, 3, 5, 8, 5, 4, 9, 1,	0, 1, 3, 7, 6, 5, 7, 8, 3, 6,	0, 1, 3, 7, 6, 5, 7, 8, 3, 6,
1, 5, 6, 2, 0, 4, 2, 3, 6, 3, 9, 8, 5, 4, 8, 5, 9,	8, 7, 8, 3, 3, 8, 9, 9, 9, 1,	8, 7, 8, 3, 3, 8, 9, 9, 9, 1,
6, 5, 8, 2, 0, 8, 8, 3, 2, 0, 9, 8, 9, 7, 5, 9, 9,	0, 3, 0, 2, 0, 3, 7, 1, 2, 1,	0, 3, 0, 2, 0, 3, 7, 1, 2, 1,
0, 8, 8, 4, 2, 0, 2, 6, 4, 6, 2, 2, 1, 7, 4, 5, 2,	1, 6, 5, 0, 2, 6, 8, 7, 5, 0,	1, 6, 5, 0, 2, 6, 8, 7, 5, 0,
9, 7, 4, 7, 5, 8, 6, 5, 1, 6, 8, 5, 1, 4, 7, 5, 2,	7, 1, 7, 7, 0, 5, 2, 2, 2, 8,	7, 1, 7, 7, 0, 5, 2, 2, 2, 8,
7, 8, 2, 5, 5, 3, 5, 2, 5, 4, 6, 8, 3, 8, 4, 0, 5,	6, 9, 4, 7, 7, 7, 0, 0, 4, 9,	6, 9, 4, 7, 7, 7, 0, 0, 4, 9,
6, 4, 6, 9, 8, 5, 5, 5, 9, 1, 7, 8, 3, 3, 0, 8, 9,	7, 5, 8, 5, 5, 4, 5, 2, 2, 4,	7, 5, 8, 5, 5, 4, 5, 2, 2, 4,
6, 6, 2, 8, 1, 6, 1, 2, 5, 4, 7, 9, 5, 0, 6, 2, 3,	2, 0, 2, 5, 3, 1, 2, 3, 6, 8,	2, 0, 2, 5, 3, 1, 2, 3, 6, 8,
7, 7, 3, 4, 7, 6, 8, 9, 9, 0, 5, 7, 5, 0, 6, 2, 4,	0, 0, 3, 4, 5, 2, 8, 6, 8, 9,	0, 0, 3, 4, 5, 2, 8, 6, 8, 9,
4, 3, 7, 4, 1, 7, 4, 6, 8, 1, 2, 9, 9, 3, 7, 7, 6,	2,snip 7, 8, 2, 8, 6,	2,snip 7, 8, 2, 8, 6,
7, 2, 8, 5, 2, 8, 4, 2, 9, 6, 5, 4, 1, 3, 7, 8, 4,	3, 4, 1, 0, 2, 4, 7, 0, 2, 4,	3, 4, 1, 0, 2, 4, 7, 0, 2, 4,
4, 7, 0, 2, 2, 2, 0, 2, 4, 9, 5, 3, 1, 1, 1, 3, 6,	8, 2, 6, 2, 1, 0, 5, 1, 5, 0,	8, 2, 6, 2, 1, 0, 5, 1, 5, 0,
2, 3, 2, 4, 0, 3, 0, 0, 0, 9, 6, 7, 5, 6, 7, 8, 1,	6, 1, 0, 9, 8, 6, 9, 5, 7, 5,	6, 1, 0, 9, 8, 6, 9, 5, 7, 5,
9, 1, 2, 4, 2, 4, 3, 3, 1, 0, 5, 8, 6, 7, 6, 1, 4,	3, 6, 0, 5, 9, 0, 9, 9, 0, 3,	3, 6, 0, 5, 9, 0, 9, 9, 0, 3,
7, 5, 4, 4, 0, 6, 7, 1, 8, 9, 9, 9, 8, 8, 6, 4, 6,	0, 9, 3, 9, 6, 5, 3, 2, 8, 9,	0, 9, 3, 9, 6, 5, 3, 2, 8, 9,
8, 1, 2, 2, 7, 9, 6, 8, 6, 4, 9, 2, 3, 0, 5, 7, 2,	0, 0, 7, 5, 1, 1, 2, 1, 4, 0,	0, 0, 7, 5, 1, 1, 2, 1, 4, 0,
3, 1, 9, 7, 1, 7, 0, 3, 9, 5, 7, 2, 1, 5, 6, 1, 5,	2, 0, 7, 1, 4, 5, 5, 6, 2, 6,	2, 0, 7, 1, 4, 5, 5, 6, 2, 6,
3, 8, 0, 1, 1, 0, 6, 1, 5, 1, 5, 5, 9, 8, 9, 0, 5,	1, 0, 4, 0, 7, 1, 3, 3, 4, 5,	1, 0, 4, 0, 7, 1, 3, 3, 4, 5,
5, 8, 8, 2, 6, 6, 7, 7, 9, 5, 6, 4, 2, 3, 3, 0, 5,	0, 7, 1, 0, 9, 8, 7, 0, 0, 8,	0, 7, 1, 0, 9, 8, 7, 0, 0, 8,
8, 4, 7, 1, 5, 2, 3, 4, 3, 8, 6, 4, 0, 9, 8, 3, 8,	2, 5, 3, 2, 7, 4, 9, 0, 6, 0,	2, 5, 3, 2, 7, 4, 9, 0, 6, 0,

Test	Expected	Got
4, 3, 7, 9, 4, 3, 1, 7, 8, 6, 5, 8, 5, 6, 4, 0, 6,	7, 4, 7, 2, 8, 6, 3, 9, 7, 0,	7, 4, 7, 2, 8, 6, 3, 9, 7, 0,
6, 2, 9, 3, 9, 8, 5, 4, 7, 3, 7, 8, 9, 7, 9, 5, 3,	6, 3, 9, 6, 7, 7, 4, 6, 9, 7,	6, 3, 9, 6, 7, 7, 4, 6, 9, 7,
2, 4, 1, 2, 2, 9, 1, 9, 0, 4, 3, 6, 1, 6, 1, 1, 5,	5, 9, 9, 4, 8, 3, 3, 6, 6, 6,	5, 9, 9, 4, 8, 3, 3, 6, 6, 6,
2, 8, 6, 0, 9, 0, 6, 9, 0, 3, 0, 9, 8, 7, 3, 3, 1,	7, 5, 4, 7, 0, 6, 2, 9, 7, 4,	7, 5, 4, 7, 0, 6, 2, 9, 7, 4,
0, 7, 2, 1, 3, 3, 7, 7, 6, 9, 1, 3, 8, 5, 6, 2, 8,	2, 3, 9, 3, 9, 6, 0, 7, 8, 0,	2, 3, 9, 3, 9, 6, 0, 7, 8, 0,
8, 3, 7, 3, 4, 7, 6, 6, 8, 5, 1, 7, 8, 1, 5, 3, 7,	0, 7, 9, 1, 6, 0, 7, 1, 6, 1,	0, 7, 9, 1, 6, 0, 7, 1, 6, 1,
9, 6, 3, 8, 4, 8, 0, 4, 7, 7, 2, 9, 2, 6, 2, 8, 7,	0, 9, 1, 0, 9, 1, 8, 3, 6, 8,	0, 9, 1, 0, 9, 1, 8, 3, 6, 8,
7, 5, 9, 4, 4, 3, 0, 6, 2, 2, 6, 5, 4, 4, 7, 8, 0,	1, 2, 8, 5, 9, 7, 1, 1, 5, 4,	1, 2, 8, 5, 9, 7, 1, 1, 5, 4,
7, 5, 8, 5, 6, 7, 2, 5, 3, 4, 6, 4, 4};	5, 7, 5, 9, 4, 9, 5, 4, 2, 4,	5, 7, 5, 9, 4, 9, 5, 4, 2, 4,
int k = 1000;	4, 1, 1, 3, 1, 9, 8, 6, 4, 1,	4, 1, 1, 3, 1, 9, 8, 6, 4, 1,
LLNode* head = LLNode::createWithIterators(arr, arr	2, 2, 4, 2, 9, 8, 2, 4, 9, 0,	2, 2, 4, 2, 9, 8, 2, 4, 9, 0,
+ sizeof(arr) / sizeof(int));	3, 6, 1, 1, 8, 4, 2, 0, 7, 6,	3, 6, 1, 1, 8, 4, 2, 0, 7, 6,
LLNode::printList(head);	7, 3, 9, 7, 0, 9, 8, 6, 0, 5,	7, 3, 9, 7, 0, 9, 8, 6, 0, 5,
cout << "\n";	1, 8, 0, 2, 9, 5, 5, 8, 5, 3,	1, 8, 0, 2, 9, 5, 5, 8, 5, 3,
LLNode* newhead = rotateLinkedList(head, k);	9, 8, 7, 0, 4, 8, 2, 2, 6, 8,	9, 8, 7, 0, 4, 8, 2, 2, 6, 8,
LLNode::printList(newhead);	4, 1, 4, 7, 2, 2, 1, 0, 6, 4,	4, 1, 4, 7, 2, 2, 1, 0, 6, 4,
	8, 9, 5, 1, 0, 2, 6, 3, 9, 1,	8, 9, 5, 1, 0, 2, 6, 3, 9, 1,
	2, 0, 1, 3, 6, 4, 7, 0, 0, 5,	2, 0, 1, 3, 6, 4, 7, 0, 0, 5,
	6, 7, 3, 2, 6, 8, 8, 5, 4, 8,	6, 7, 3, 2, 6, 8, 8, 5, 4, 8,
	4, 5, 0, 2, 8, 1, 2, 9, 9, 5,	4, 5, 0, 2, 8, 1, 2, 9, 9, 5,
	1, 4, 8, 8, 1, 3, 9, 2, 8, 6,	1, 4, 8, 8, 1, 3, 9, 2, 8, 6,
	1, 0, 8, 7, 3, 7, 3, 6, 9, 7,	1, 0, 8, 7, 3, 7, 3, 6, 9, 7,
	1, 7, 9, 3, 3, 8, 7, 9, 1, 9,	1, 7, 9, 3, 3, 8, 7, 9, 1, 9,
	1, 9, 4, 1, 1, 0, 3, 6, 7, 5,	1, 9, 4, 1, 1, 0, 3, 6, 7, 5,
	3, 7, 8, 8, 1, 4, 9, 0, 3, 9,	3, 7, 8, 8, 1, 4, 9, 0, 3, 9,
	9, 6, 4, 8, 2, 6, 7, 9, 0, 3,	9, 6, 4, 8, 2, 6, 7, 9, 0, 3,
	9, 0, 6, 8, 9, 2, 1, 2, 5, 0,	9, 0, 6, 8, 9, 2, 1, 2, 5, 0,
	8, 8, 4, 5, 6, 3, 7, 5, 2, 0,	8, 8, 4, 5, 6, 3, 7, 5, 2, 0,
	0, 2, 1, 2, 4, 7, 8, 3, 0, 8,	0, 2, 1, 2, 4, 7, 8, 3, 0, 8,
	2, 1, 4, 5, 1, 7, 6, 4, 1, 3,	2, 1, 4, 5, 1, 7, 6, 4, 1, 3,
	5, 3, 7, 3, 9, 2, 8, 8, 0, 6,	5, 3, 7, 3, 9, 2, 8, 8, 0, 6,
	1, 0, 2, 5, 3, 2, 1, 4, 4, 1,	1, 0, 2, 5, 3, 2, 1, 4, 4, 1,
	6, 2, 8, 7, 2, 8, 1, 4, 7, 0,	6, 2, 8, 7, 2, 8, 1, 4, 7, 0,
	6, 0, 5, 5, 0, 9, 6, 0, 6, 8,	6, 0, 5, 5, 0, 9, 6, 0, 6, 8,
	6, 7, 7, 3, 9, 0, 2, 9, 0, 6,	6, 7, 7, 3, 9, 0, 2, 9, 0, 6,
	7, 4, 7, 3, 3, 1, 1, 3, 7, 0,	1

Test	Expected	Got
	3, 2, 4, 1, 6, 4, 2, 9, 3, 8,	3, 2, 4, 1, 6, 4, 2, 9, 3, 8,
	3, 1, 3, 4, 8, 4, 3, 6, 3, 4,	3, 1, 3, 4, 8, 4, 3, 6, 3, 4,
	6, 7, 8, 3, 0, 7, 2, 3, 3, 9,	6, 7, 8, 3, 0, 7, 2, 3, 3, 9,
	6, 8, 3, 0, 3, 1, 2, 2, 7, 7,	6, 8, 3, 0, 3, 1, 2, 2, 7, 7,
	1, 9, 7, 8, 0, 6, 1, 7, 4, 2,	1, 9, 7, 8, 0, 6, 1, 7, 4, 2,
	1, 5, 5, 1, 4, 7, 7, 8, 6, 3,	1, 5, 5, 1, 4, 7, 7, 8, 6, 3,
	2, 4, 7, 4, 3, 5, 0, 4, 5, 5,	2, 4, 7, 4, 3, 5, 0, 4, 5, 5,
	9, 4, 1, 2, 0, 4, 6, 3, 3, 2,	9, 4, 1, 2, 0, 4, 6, 3, 3, 2,
	9, 4, 1, 4, 8, 3, 7, 2, 3, 3,	9, 4, 1, 4, 8, 3, 7, 2, 3, 3,
	4, 5, 9, 0, 1, 0, 8, 5, 1, 1,	4, 5, 9, 0, 1, 0, 8, 5, 1, 1,
	7, 4, 8, 6, 1, 0, 9, 5, 5, 3,	7, 4, 8, 6, 1, 0, 9, 5, 5, 3,
	9, 8, 0, 0, 8, 1, 0, 8, 8, 7,	9, 8, 0, 0, 8, 1, 0, 8, 8, 7,
	3, 6, 2, 3, 0, 8, 2, 5, 2, 2,	3, 6, 2, 3, 0, 8, 2, 5, 2, 2,
	3, 3, 2, 2, 9, 4, 4, 4, 1, 0,	3, 3, 2, 2, 9, 4, 4, 4, 1, 0,
	8, 3, 4, 8, 9, 1, 1, 0, 8, 2,	8, 3, 4, 8, 9, 1, 1, 0, 8, 2,
	6, 0, 9, 3, 5, 6, 3, 8, 5, 4,	6, 0, 9, 3, 5, 6, 3, 8, 5, 4,
	5, 8, 9, 0, 3, 9, 8, 9, 8, 3,	5, 8, 9, 0, 3, 9, 8, 9, 8, 3,
	5, 4, 5, 4, 3, 8, 0, 3, 4, 5,	5, 4, 5, 4, 3, 8, 0, 3, 4, 5,
	1, 3, 4, 6, 7, 9, 6, 5, 4, 1,	1, 3, 4, 6, 7, 9, 6, 5, 4, 1,
	1, 6, 5, 2, 0, 7, 5, 3, 7, 5,	1, 6, 5, 2, 0, 7, 5, 3, 7, 5,
	1, 4, 4, 9, 6, 0, 7, 1, 7, 6,	1, 4, 4, 9, 6, 0, 7, 1, 7, 6,
	6, 9, 5, 3, 9, 2, 7, 6, 8, 5,	6, 9, 5, 3, 9, 2, 7, 6, 8, 5,
	5, 3, 7, 2, 4, 7, 5, 4, 0, 9,	5, 3, 7, 2, 4, 7, 5, 4, 0, 9,
	4, 9, 3, 8, 6, 5, 5, 5, 8, 2,	4, 9, 3, 8, 6, 5, 5, 5, 8, 2,
	8, 8, 9, 5, 7, 4, 8, 4, 9, 3,	8, 8, 9, 5, 7, 4, 8, 4, 9, 3,
	2, 2, 6, 0, 6, 4, 4, 5, 9, 4,	2, 2, 6, 0, 6, 4, 4, 5, 9, 4,
	5, 9, 4, 3, 6, 5, 1, 1, 6, 2,	5, 9, 4, 3, 6, 5, 1, 1, 6, 2,
	9, 1, 1, 0, 6, 0, 5, 5, 8, 5,	9, 1, 1, 0, 6, 0, 5, 5, 8, 5,
	7, 4, 9, 6, 3, 5, 7, 8, 1, 8,	7, 4, 9, 6, 3, 5, 7, 8, 1, 8,
	7, 4, 2, 1, 7, 0, 5, 3, 5, 4,	7, 4, 2, 1, 7, 0, 5, 3, 5, 4,
		7, 3, 7, 3, 9, 2, 3, 0, 5, 1,
		9, 9, 1, 3, 0, 0, 8, 8, 5, 3,
	0, 0, 7, 8, 1, 0, 7, 5, 2, 4,	0, 0, 7, 8, 1, 0, 7, 5, 2, 4,
	9, 8, 6, 0, 3, 2, 6, 4, 0, 5,	9, 8, 6, 0, 3, 2, 6, 4, 0, 5,
		1, 4, 2, 5, 6, 9, 2, 1, 9, 3,
	1, 0, 7, 0, 8, 5, 8, 0, 8, 5,	1, 0, 7, 0, 8, 5, 8, 0, 8, 5,

Test	Expected	Got
	6, 5, 4, 4, 2, 1, 6, 5, 5, 4	6, 5, 4, 4, 2, 1, 6, 5, 5, 4,
	7, 0, 3, 6, 2, 0, 8, 8, 6, 3	, 7, 0, 3, 6, 2, 0, 8, 8, 6, 3,
	1, 7, 0, 5, 4, 7, 7, 0, 9, 1	, 1, 7, 0, 5, 4, 7, 7, 0, 9, 1,
	5, 4, 4, 1, 9, 3, 7, 9, 9, 3	, 5, 4, 4, 1, 9, 3, 7, 9, 9, 3,
	2, 8, 5, 4, 9, 2, 2, 0, 5, 1	, 2, 8, 5, 4, 9, 2, 2, 0, 5, 1,
	8, 3, 6, 7, 2, 7, 7, 0, 3, 5	, 8, 3, 6, 7, 2, 7, 7, 0, 3, 5,
	2, 6, 8, 4, 6, 2, 7, 0, 1, 5	, 2, 6, 8, 4, 6, 2, 7, 0, 1, 5,
	3, 2, 0, 3, 2, 6, 9, 2, 5, 8	, 3, 2, 0, 3, 2, 6, 9, 2, 5, 8,
	3, 6, 3, 0, 4, 9, 8, 1, 2, 4	3, 6, 3, 0, 4, 9, 8, 1, 2, 4,
	9, 6, 3, 3, 2, 7, 2, 8, 2, 1	, 9, 6, 3, 3, 2, 7, 2, 8, 2, 1,
	0, 5, 1, 7, 1, 2, 7, 1, 5, 4	0, 5, 1, 7, 1, 2, 7, 1, 5, 4,
	2, 5, 4, 3, 0, 2, 9, 3, 9, 5	, 2, 5, 4, 3, 0, 2, 9, 3, 9, 5,
	9, 4, 4, 1, 5, 1, 7, 5, 6, 3	, 9, 4, 4, 1, 5, 1, 7, 5, 6, 3,
	2, 2, 8, 1, 8, 7, 0, 6, 7, 3	, 2, 2, 8, 1, 8, 7, 0, 6, 7, 3,
	4, 7, 4, 1, 2, 9, 8, 8, 1, 7	, 4, 7, 4, 1, 2, 9, 8, 8, 1, 7,
	2, 2, 8, 3, 9, 9, 8, 8, 4, 8	, 2, 2, 8, 3, 9, 9, 8, 8, 4, 8,
	4, 6, 4, 1, 7, 3, 8, 4, 3, 1	, 4, 6, 4, 1, 7, 3, 8, 4, 3, 1,
	6, 4, 6, 1, 0, 1, 3, 8, 4, 3	, 6, 4, 6, 1, 0, 1, 3, 8, 4, 3,
	0, 7, 8, 1, 2, 6, 8, 4, 7, 4	0, 7, 8, 1, 2, 6, 8, 4, 7, 4,
	8, 8, 9, 3, 6, 6, 9, 4, 2, 4	8, 8, 9, 3, 6, 6, 9, 4, 2, 4,
	7, 3, 2, 3, 1, 6, 7, 0, 2, 4	7, 3, 2, 3, 1, 6, 7, 0, 2, 4,
	7, 9, 0, 0, 0, 4, 0, 2, 4, 0	7, 9, 0, 0, 0, 4, 0, 2, 4, 0,
	7, 8, 0, 5, 9, 2, 9, 5, 3, 3	, 7, 8, 0, 5, 9, 2, 9, 5, 3, 3,
	3, 5, 0, 9, 8, 7, 5, 9, 5, 0	, 3, 5, 0, 9, 8, 7, 5, 9, 5, 0,
	1, 2, 4, 7, 4, 9, 9, 4, 2, 9	, 1, 2, 4, 7, 4, 9, 9, 4, 2, 9,
	7, 8, 4, 4, 9, 7, 4, 0, 8, 3	, 7, 8, 4, 4, 9, 7, 4, 0, 8, 3,
	2, 8, 0, 8, 7, 1, 9, 4, 2, 5	, 2, 8, 0, 8, 7, 1, 9, 4, 2, 5,
	1, 2, 3, 9, 1, 2, 6, 0, 5, 0	, 1, 2, 3, 9, 1, 2, 6, 0, 5, 0,
	9, 1, 6, 7, 6, 6, 6, 1, 3, 8	, 9, 1, 6, 7, 6, 6, 6, 1, 3, 8,
	4, 1, 6, 7, 6, 3, 4, 3, 5, 1	, 4, 1, 6, 7, 6, 3, 4, 3, 5, 1,
	8, 0, 8, 2, 7, 2, 9, 4, 4, 5	, 8, 0, 8, 2, 7, 2, 9, 4, 4, 5,
	7, 0, 7, 6, 5, 3, 4, 1, 0, 4	
	8, 2, 2, 0, 6, 4, 4, 0, 9, 8	, 8, 2, 2, 0, 6, 4, 4, 0, 9, 8,
	6, 5, 1, 8, 3, 9, 9, 4, 9, 5	, 6, 5, 1, 8, 3, 9, 9, 4, 9, 5,
	6, 2, 4, 8, 6, 7, 9, 2, 7, 7	, 6, 2, 4, 8, 6, 7, 9, 2, 7, 7,
	5, 4, 6, 2, 0, 6, 2, 3, 7, 8	, 5, 4, 6, 2, 0, 6, 2, 3, 7, 8,
	I control to the cont	

Test	Expected	Got
	8, 0, 7, 8, 2, 9, 7, 2, 1,	4, 8, 0, 7, 8, 2, 9, 7, 2, 1, 4,
	4, 8, 2, 0, 1, 9, 6, 5, 7,	5, 4, 8, 2, 0, 1, 9, 6, 5, 7, 5,
	9, 6, 4, 4, 0, 7, 9, 7, 0,	9, 6, 4, 4, 0, 7, 9, 7, 0, 9,
	1, 6, 5, 2, 6, 2, 1, 7, 7,	5, 1, 6, 5, 2, 6, 2, 1, 7, 7, 5,
	0, 9, 5, 0, 6, 2, 9, 0, 1,	4, 0, 9, 5, 0, 6, 2, 9, 0, 1, 4,
	5, 4, 5, 7, 8, 9, 6, 7, 7,	4, 5, 4, 5, 7, 8, 9, 6, 7, 7, 4,
	2, 7, 1, 0, 9, 2, 0, 8, 2,	9, 2, 7, 1, 0, 9, 2, 0, 8, 2, 9,
	2, 9, 1, 4, 7, 2, 6, 6, 7,	4, 2, 9, 1, 4, 7, 2, 6, 6, 7, 4,
	4, 4, 8, 5, 3, 7, 2, 7, 5,	2, 4, 4, 8, 5, 3, 7, 2, 7, 5, 2,
	3, 0, 7, 5, 9, 8, 1, 2, 8,	1, 3, 0, 7, 5, 9, 8, 1, 2, 8, 1,
	4, 0, 4, 7, 0, 0, 3, 7, 0,	6, 4, 0, 4, 7, 0, 0, 3, 7, 0, 6,
	6, 3, 3, 7, 0, 4, 7, 4, 3,	9, 6, 3, 3, 7, 0, 4, 7, 4, 3, 9,
	3, 2, 1, 2, 1, 9, 4, 1, 3,	9, 3, 2, 1, 2, 1, 9, 4, 1, 3, 9,
	7, 6, 1, 4, 2, 5, 0, 1, 8,	7, 6, 1, 4, 2, 5, 0, 1, 8, 7,
	4, 2, 6, 7, 1, 8]	4, 2, 6, 7, 1, 8]

Test	Expected	Got	
int arr[] = {2, 2, 6, 2, 6, 9, 8, 0, 5, 7, 5, 2, 0,	[2, 2, 6, 2, 6, 9, 8, 0, 5, 7,	[2, 2, 6, 2, 6, 9, 8, 0, 5, 7,	~
3, 3, 5, 1, 0, 6, 0, 0, 4, 3, 8, 1, 0, 7, 7, 9, 8,	5, 2, 0, 3, 3, 5, 1, 0, 6, 0,	5, 2, 0, 3, 3, 5, 1, 0, 6, 0,	
7, 8, 5, 5, 2, 4, 4, 6, 1, 2, 8, 5, 8, 1, 6, 3, 0,	0, 4, 3, 8, 1, 0, 7, 7, 9, 8,	0, 4, 3, 8, 1, 0, 7, 7, 9, 8,	
6, 8, 7, 4, 0, 2, 2, 5, 6, 7, 3, 3, 2, 5, 7, 0, 2,	7, 8, 5, 5, 2, 4, 4, 6, 1, 2,	7, 8, 5, 5, 2, 4, 4, 6, 1, 2,	
2, 9, 8, 5, 8, 2, 7, 2, 2, 6, 1, 0, 4, 2, 2, 7, 6,	8, 5, 8, 1, 6, 3, 0, 6, 8, 7,	8, 5, 8, 1, 6, 3, 0, 6, 8, 7,	
8, 5, 5, 7, 7, 7, 0, 0, 6, 6, 6, 2, 7, 0, 9, 8,	4, 0, 2, 2, 5, 6, 7, 3, 3, 2,	4, 0, 2, 2, 5, 6, 7, 3, 3, 2,	
7, 2, 9, 3, 0, 0, 4, 6, 2, 5, 1, 3, 1, 7, 2, 0, 9,	5, 7, 0, 2, 2, 9, 8, 5, 8, 2,	5, 7, 0, 2, 2, 9, 8, 5, 8, 2,	
8, 4, 8, 5, 3, 7, 8, 8, 7, 1, 5, 4, 1, 5, 1, 1, 5,	7, 2, 2, 6, 1, 0, 4, 2, 2, 7,	7, 2, 2, 6, 1, 0, 4, 2, 2, 7,	
8, 4, 2, 2, 6, 0, 7, 8, 6, 7, 9, 9, 0, 5, 6, 1, 4,	6, 8, 5, 5, 7, 7, 7, 7, 0, 0,	6, 8, 5, 5, 7, 7, 7, 7, 0, 0,	
9, 9, 0, 3, 2, 6, 5, 6, 1, 7, 8, 8, 9, 0, 0, 2, 6,	6, 6, 6, 2, 7, 0, 9, 8, 7, 2,	6, 6, 6, 2, 7, 0, 9, 8, 7, 2,	
9, 3, 7, 3, 7, 4, 9, 1, 9, 2, 7, 8, 2, 8, 2, 7, 7,	9, 3, 0, 0, 4, 6, 2, 5, 1, 3,	9, 3, 0, 0, 4, 6, 2, 5, 1, 3,	
9, 1, 4, 4, 0, 4, 7, 8, 1, 3, 4, 5, 5, 1, 7, 3, 3,	1, 7, 2, 0, 9, 8, 4, 8, 5, 3,	1, 7, 2, 0, 9, 8, 4, 8, 5, 3,	
4, 5, 8, 5, 8, 3, 5, 8, 2, 6, 1, 2, 1, 9, 4, 0, 7,	7, 8, 8, 7, 1, 5, 4, 1, 5, 1,	7, 8, 8, 7, 1, 5, 4, 1, 5, 1,	
4, 7, 0, 1, 5, 6, 8, 8, 3, 1, 7, 4, 0, 9, 6, 2, 9,	1, 5, 8, 4, 2, 2, 6, 0, 7, 8,	1, 5, 8, 4, 2, 2, 6, 0, 7, 8,	
6, 9, 6, 7, 6, 0, 1, 7, 6, 7, 4, 7, 9, 1, 0, 4, 7,	6, 7, 9, 9, 0, 5, 6, 1, 4, 9,	6, 7, 9, 9, 0, 5, 6, 1, 4, 9,	
3, 0, 6, 5, 2, 6, 7, 4, 8, 4, 3, 7, 3, 2, 0, 1, 9,	9, 0, 3, 2, 6, 5, 6, 1, 7, 8,	9, 0, 3, 2, 6, 5, 6, 1, 7, 8,	
7, 8, 8, 8, 3, 8, 7, 5, 0, 4, 0, 5, 2, 6, 2, 4, 2,	8, 9, 0, 0, 2, 6, 9, 3, 7, 3,	8, 9, 0, 0, 2, 6, 9, 3, 7, 3,	
9, 8, 7, 0, 2, 9, 4, 0, 7, 4, 8, 3, 2, 1, 0, 8, 1,	7, 4, 9, 1, 9, 2, 7, 8, 2, 8,	7, 4, 9, 1, 9, 2, 7, 8, 2, 8,	
2, 2, 0, 2, 1, 1, 3, 9, 4, 2, 4, 6, 3, 0, 1, 0, 1,	2, 7, 7, 9, 1, 4, 4, 0, 4, 7,	2, 7, 7, 9, 1, 4, 4, 0, 4, 7,	
9, 3, 0, 8, 6, 5, 7, 9, 3, 2, 0, 8, 0, 6, 8, 0, 5,	8, 1, 3, 4, 5, 5, 1, 7, 3, 3,	8, 1, 3, 4, 5, 5, 1, 7, 3, 3,	
1, 7, 6, 9, 8, 0, 7, 1, 6, 6, 3, 1, 2, 3, 1, 5, 6,	4, 5, 8, 5, 8, 3, 5, 8, 2, 6,	4, 5, 8, 5, 8, 3, 5, 8, 2, 6,	
2, 9, 3, 2, 3, 0, 5, 5, 1, 6, 3, 6, 2, 4, 7, 6, 5,	1, 2, 1, 9, 4, 0, 7, 4, 7, 0,	1, 2, 1, 9, 4, 0, 7, 4, 7, 0,	
7, 4, 5, 1, 9, 8, 6, 2, 0, 1, 9, 3, 6, 5, 0, 3, 4,	1, 5, 6, 8, 8, 3, 1, 7, 4, 0,	1, 5, 6, 8, 8, 3, 1, 7, 4, 0,	
5, 6, 2, 5, 6, 9, 9, 0, 3, 7, 0, 8, 8, 0, 3, 0, 4,	9, 6, 2, 9, 6, 9, 6, 7, 6, 0,	9, 6, 2, 9, 6, 9, 6, 7, 6, 0,	
2, 7, 0, 9, 0, 6, 3, 9, 9, 5, 8, 9, 6, 2, 3, 0, 7,	1, 7, 6, 7, 4, 7, 9, 1, 0, 4,	1, 7, 6, 7, 4, 7, 9, 1, 0, 4,	
1, 8, 9, 7, 5, 2, 4, 0, 0, 8, 4, 4, 4, 9, 9, 4, 7,	7, 3, 0, 6, 5, 2, 6, 7, 4, 8,	7, 3, 0, 6, 5, 2, 6, 7, 4, 8,	
6, 1, 9, 1, 0, 9, 8, 0, 6, 4, 4, 0, 6, 1, 8, 6, 3,	4, 3, 7, 3, 2, 0, 1, 9, 7, 8,	4, 3, 7, 3, 2, 0, 1, 9, 7, 8,	
0, 2, 6, 6, 3, 0, 3, 3, 2, 1, 1, 5, 8, 0, 0, 0, 2,	8, 8, 3, 8, 7, 5, 0, 4, 0, 5,	8, 8, 3, 8, 7, 5, 0, 4, 0, 5,	
3, 2, 0, 1, 3, 3, 6, 4, 9, 9, 7, 0, 5, 4, 5, 5, 9,	2, 6, 2, 4, 2, 9, 8, 7, 0, 2,		
4, 5, 5, 3, 4, 2, 7, 8, 3, 6, 7, 0, 2, 4, 7, 0, 6,	9, 4, 0, 7, 4, 8, 3, 2, 1, 0,	9, 4, 0, 7, 4, 8, 3, 2, 1, 0,	
9, 9, 1, 8, 3, 4, 0, 7, 6, 5, 2, 8, 0, 7, 7, 7,	8, 1, 2, 2, 0, 2, 1, 1, 3, 9,	8, 1, 2, 2, 0, 2, 1, 1, 3, 9,	
2, 4, 9, 3, 3, 5, 0, 1, 2, 8, 7, 1, 0, 3, 5, 0, 4,	4, 2, 4, 6, 3, 0, 1, 0, 1, 9,	4, 2, 4, 6, 3, 0, 1, 0, 1, 9,	
6, 5, 2, 0, 0, 5, 7, 0, 4, 6, 4, 2, 9, 4, 8, 6, 7,	3, 0, 8, 6, 5, 7, 9, 3, 2, 0,	3, 0, 8, 6, 5, 7, 9, 3, 2, 0,	
1, 3, 2, 1, 4, 8, 8, 1, 1, 6, 1, 6, 3, 0, 9, 2, 5,	8, 0, 6, 8, 0, 5, 1, 7, 6, 9,	8, 0, 6, 8, 0, 5, 1, 7, 6, 9,	
1, 8, 8, 2, 9, 4, 0, 0, 1, 8, 4, 0, 4, 2, 6, 0, 2,	8, 0, 7, 1, 6, 6, 3, 1, 2, 3,	8, 0, 7, 1, 6, 6, 3, 1, 2, 3,	
8, 0, 2, 8, 4, 5, 6, 1, 5, 8, 7, 3, 8, 0, 9, 9, 3,		1, 5, 6, 2, 9, 3, 2, 3, 0, 5,	

Test	Expected	Got
5, 4, 8, 2, 6, 1, 7, 8, 1, 8, 0, 2, 4, 3, 6, 4, 3,	5, 1, 6, 3, 6, 2, 4, 7, 6, 5,	5, 1, 6, 3, 6, 2, 4, 7, 6, 5,
5, 7, 7, 5, 8, 0, 8, 4, 6, 0, 5, 4, 9, 1, 3, 8, 8,	7, 4, 5, 1, 9, 8, 6, 2, 0, 1,	7, 4, 5, 1, 9, 8, 6, 2, 0, 1,
2, 6, 4, 0, 0, 1, 0, 8, 6, 0, 0, 9, 3, 3, 2, 1, 3,	9, 3, 6, 5, 0, 3, 4, 5, 6, 2,	9, 3, 6, 5, 0, 3, 4, 5, 6, 2,
4, 0, 7, 1, 0, 2, 3, 1, 2, 3, 4, 6, 1, 5, 7, 3, 6,	5, 6, 9, 9, 0, 3, 7, 0, 8, 8,	5, 6, 9, 9, 0, 3, 7, 0, 8, 8,
3, 2, 2, 4, 4, 0, 8, 1, 6, 8, 1, 4, 2, 9, 6, 2, 7,	0, 3, 0, 4, 2, 7, 0, 9, 0, 6,	0, 3, 0, 4, 2, 7, 0, 9, 0, 6,
9, 6, 8, 0, 2, 7, 6, 8, 3, 9, 1, 1, 3, 3, 0, 3, 4,	3, 9, 9, 5, 8, 9, 6, 2, 3, 0,	3, 9, 9, 5, 8, 9, 6, 2, 3, 0,
9, 3, 4, 2, 7, 7, 2, 5, 1, 4, 8, 0, 4, 0, 7, 2, 8,	7, 1, 8, 9, 7, 5, 2, 4, 0, 0,	7, 1, 8, 9, 7, 5, 2, 4, 0, 0,
8, 7, 1, 4, 8, 6, 6, 6, 3, 2, 1, 9, 5, 9, 6, 7, 4,	8, 4, 4, 4, 9, 9, 4, 7, 6, 1,	8, 4, 4, 4, 9, 9, 4, 7, 6, 1,
1, 6, 3, 6, 3, 8, 3, 6, 0, 0, 2, 7, 3, 9, 4, 2, 1,	9, 1, 0, 9, 8, 0, 6, 4, 4, 0,	9, 1, 0, 9, 8, 0, 6, 4, 4, 0,
6, 4, 6, 8, 9, 6, 0, 4, 2, 0, 8, 2, 8, 8, 7, 0, 4,	6, 1, 8, 6, 3, 0, 2, 6, 6, 3,	6, 1, 8, 6, 3, 0, 2, 6, 6, 3,
4, 9, 3, 4, 2, 9, 1, 0, 1, 0, 4, 5, 6, 7, 7, 1, 5,	0, 3, 3, 2, 1, 1, 5, 8, 0, 0,	0, 3, 3, 2, 1, 1, 5, 8, 0, 0,
4, 1, 3, 7, 8, 0, 8, 8, 6, 1, 1, 1, 0, 6, 8, 8, 4,	0, 2, 3, 2, 0, 1, 3, 3, 6, 4,	0, 2, 3, 2, 0, 1, 3, 3, 6, 4,
1, 8, 0, 4, 1, 2, 1, 1, 6, 3, 5, 8, 2, 0, 5, 6, 8,	9, 9, 7, 0, 5, 4, 5, 5, 9, 4,	9, 9, 7, 0, 5, 4, 5, 5, 9, 4,
5, 9, 5, 1, 0, 0, 6, 7, 6, 0, 0, 0, 4, 9, 6, 0, 4,	5, 5, 3, 4, 2, 7, 8, 3, 6, 7,	5, 5, 3, 4, 2, 7, 8, 3, 6, 7,
8, 2, 9, 1, 3, 8, 2, 5, 5, 3, 9, 1, 6, 1, 8, 8, 4,	0, 2, 4, 7, 0, 6, 9, 9, 1, 8,	0, 2, 4, 7, 0, 6, 9, 9, 1, 8,
8, 8, 0, 8, 9, 9, 3, 7, 7, 6, 0, 8, 1, 9, 1, 0, 3,	3, 4, 0, 7, 6, 5, 2, 8, 0, 7,	3, 4, 0, 7, 6, 5, 2, 8, 0, 7,
5, 4, 9, 1, 5, 6, 8, 6, 3, 4, 6, 3, 3, 3, 8, 1, 6,	7, 7, 7, 2, 4, 9, 3, 3, 5, 0,	7, 7, 7, 2, 4, 9, 3, 3, 5, 0,
5, 0, 8, 4, 1, 6, 9, 1, 8, 0, 5, 5, 8, 6, 1, 8, 7,	1, 2, 8, 7, 1, 0, 3, 5, 0, 4,	1, 2, 8, 7, 1, 0, 3, 5, 0, 4,
7, 9, 6, 8, 4, 7, 5, 5, 0, 8, 8, 2, 1, 6, 3, 0, 2,	6, 5, 2, 0, 0, 5, 7, 0, 4, 6,	6, 5, 2, 0, 0, 5, 7, 0, 4, 6,
8, 9, 7, 7, 6, 5, 8, 3, 3, 9, 3, 9, 5, 1, 7, 1, 1,	4, 2, 9, 4, 8, 6, 7, 1, 3, 2,	4, 2, 9, 4, 8, 6, 7, 1, 3, 2,
8, 1, 7, 8, 6, 1, 0, 3, 4, 1, 7, 0, 4, 1, 6, 2, 2,	1, 4, 8, 8, 1, 1, 6, 1, 6, 3,	1, 4, 8, 8, 1, 1, 6, 1, 6, 3,
1, 7, 7, 0, 0, 2, 5, 4, 9, 8, 1, 3, 1, 1, 3, 2, 7,	0, 9, 2, 5, 1, 8, 8, 2, 9, 4,	0, 9, 2, 5, 1, 8, 8, 2, 9, 4,
8, 0, 9, 3, 4, 3, 2, 9, 8, 7, 2, 5, 4, 0, 4, 8, 5,	0, 0, 1, 8, 4, 0, 4, 2, 6, 0,	0, 0, 1, 8, 4, 0, 4, 2, 6, 0,
3, 9, 3, 9, 6, 2, 7, 1, 7, 7, 5, 6, 1, 7, 7, 7, 8,	2, 8, 0, 2, 8, 4, 5, 6, 1, 5,	2, 8, 0, 2, 8, 4, 5, 6, 1, 5,
4, 6, 0, 2, 3, 5, 8, 0, 1, 4, 9, 6, 1, 7, 5, 3, 3,	8, 7, 3, 8, 0, 9, 9, 3, 5, 4,	8, 7, 3, 8, 0, 9, 9, 3, 5, 4,
8, 2, 6, 2, 7, 3, 0, 1, 3, 8, 7, 0, 9, 7, 4, 4, 4,	8, 2, 6, 1, 7, 8, 1, 8, 0, 2,	8, 2, 6, 1, 7, 8, 1, 8, 0, 2,
6, 0, 8, 2, 6, 9, 9, 5, 3, 7, 9, 4, 8, 8, 6, 1, 7,	4, 3, 6, 4, 3, 5, 7, 7, 5, 8,	4, 3, 6, 4, 3, 5, 7, 7, 5, 8,
9, 4, 8, 0, 0, 2, 5, 8, 6, 3, 3, 1, 2, 5, 5, 2, 9,	0, 8, 4, 6, 0, 5, 4, 9, 1, 3,	0, 8, 4, 6, 0, 5, 4, 9, 1, 3,
4, 8, 8, 6, 9, 1, 3, 9, 5, 3, 0, 7, 2, 1, 2, 4, 4,	8, 8, 2, 6, 4, 0, 0, 1, 0, 8,	8, 8, 2, 6, 4, 0, 0, 1, 0, 8,
6, 0, 2, 8, 7, 1, 6, 7, 4, 5, 1, 9, 4, 4, 7, 0, 3,	6, 0, 0, 9, 3, 3, 2, 1, 3, 4,	6, 0, 0, 9, 3, 3, 2, 1, 3, 4,
6, 0, 0, 7, 8, 0, 4, 5, 7, 7, 6, 5, 0, 3, 1, 0, 7,	0, 7, 1, 0, 2, 3, 1, 2, 3, 4,	0, 7, 1, 0, 2, 3, 1, 2, 3, 4,
0, 5, 0, 3, 1, 2, 1, 9, 3, 4, 4, 0, 0, 2, 9, 6, 3,	6, 1, 5, 7, 3, 6, 3, 2, 2, 4,	6, 1, 5, 7, 3, 6, 3, 2, 2, 4,
8, 9, 6, 7, 6, 9, 5, 3, 2, 1, 3, 0, 2, 7, 9, 8, 8,	4, 0, 8, 1, 6, 8, 1, 4, 2, 9,	4, 0, 8, 1, 6, 8, 1, 4, 2, 9,
5, 4, 4, 2, 6, 5, 4, 2, 0, 0, 2, 7, 8, 8, 7, 9, 7,	6, 2, 7, 9, 6, 8, 0, 2, 7, 6,	6, 2, 7, 9, 6, 8, 0, 2, 7, 6,
9, 8, 8, 2, 6, 0, 9, 0, 2, 6, 1, 9, 2, 9, 2, 5, 8,	8, 3, 9, 1, 1, 3, 3, 0, 3, 4,	8, 3, 9, 1, 1, 3, 3, 0, 3, 4,
6, 8, 0, 1, 5, 0, 6, 9, 7, 7, 2, 1, 5, 6, 1, 7, 0,	9, 3, 4, 2, 7, 7, 2, 5, 1, 4,	9, 3, 4, 2, 7, 7, 2, 5, 1, 4,

Test	Expected	Got
0, 7, 0, 0, 2, 8, 3, 3, 2, 9, 8, 9, 8, 9, 9, 1, 7,	8, 0, 4, 0, 7, 2, 8, 8, 7, 1,	8, 0, 4, 0, 7, 2, 8, 8, 7, 1,
6, 2, 5, 1, 2, 5, 7, 0, 8, 2, 8, 7, 7, 6, 1, 2, 8,	4, 8, 6, 6, 6, 3, 2, 1, 9, 5,	4, 8, 6, 6, 6, 3, 2, 1, 9, 5,
2, 5, 8, 0, 5, 7, 0, 7, 0, 2, 5, 5, 0, 3, 1, 8, 5,	9, 6, 7, 4, 1, 6, 3, 6, 3, 8,	9, 6, 7, 4, 1, 6, 3, 6, 3, 8,
7, 6, 8, 0, 0, 5, 1, 9, 0, 1, 3, 3, 3, 5, 5, 0, 6,	3, 6, 0, 0, 2, 7, 3, 9, 4, 2,	3, 6, 0, 0, 2, 7, 3, 9, 4, 2,
8, 5, 4, 7, 7, 8, 0, 3, 5, 9, 2, 8, 7, 8, 4, 5, 7,	1, 6, 4, 6, 8, 9, 6, 0, 4, 2,	1, 6, 4, 6, 8, 9, 6, 0, 4, 2,
6, 4, 9, 7, 6, 1, 1, 1, 6, 0, 1, 0, 7, 5, 1, 9, 9,	0, 8, 2, 8, 8, 7, 0, 4, 4, 9,	0, 8, 2, 8, 8, 7, 0, 4, 4, 9,
2, 7, 4, 9, 9,snip 2, 6, 9, 2, 8, 3, 8, 0,	3, 4, 2, 9, 1, 0, 1, 0, 4, 5,	3, 4, 2, 9, 1, 0, 1, 0, 4, 5,
6, 8, 3, 5, 0, 9, 6, 0, 7, 2, 5, 0, 3, 2, 8, 8, 2,	6, 7, 7, 1, 5, 4, 1, 3, 7, 8,	6, 7, 7, 1, 5, 4, 1, 3, 7, 8,
5, 5, 3, 6, 9, 4, 9, 2, 2, 9, 6, 6, 7, 5, 7, 4, 6,	0, 8, 8, 6, 1, 1, 1, 0, 6, 8,	0, 8, 8, 6, 1, 1, 1, 0, 6, 8,
9, 8, 9, 7, 9, 2, 7, 0, 4, 9, 0, 6, 2, 8, 1, 3, 0,	8, 4, 1, 8, 0, 4, 1, 2, 1, 1,	8, 4, 1, 8, 0, 4, 1, 2, 1, 1,
3, 4, 7, 0, 7, 2, 1, 7, 4, 2, 0, 6, 5, 6, 3, 6, 6,	6, 3, 5, 8, 2, 0, 5, 6, 8, 5,	6, 3, 5, 8, 2, 0, 5, 6, 8, 5,
9, 1, 3, 0, 8, 4, 9, 7, 1, 6, 8, 4, 9, 8, 3, 4, 0,	9, 5, 1, 0, 0, 6, 7, 6, 0, 0,	9, 5, 1, 0, 0, 6, 7, 6, 0, 0,
2, 2, 4, 6, 2, 7, 9, 0, 3, 8, 0, 6, 0, 6, 7, 7, 9,	0, 4, 9, 6, 0, 4, 8, 2, 9, 1,	0, 4, 9, 6, 0, 4, 8, 2, 9, 1,
6, 0, 4, 7, 8, 4, 4, 2, 7, 0, 0, 8, 0, 8, 8, 5, 7,	3, 8, 2, 5, 5, 3, 9, 1, 6, 1,	3, 8, 2, 5, 5, 3, 9, 1, 6, 1,
6, 2, 8, 5, 5, 3, 7, 1, 2, 8, 8, 4, 1, 8, 1, 8, 7,	8, 8, 4, 8, 8, 0, 8, 9, 9, 3,	8, 8, 4, 8, 8, 0, 8, 9, 9, 3,
8, 4, 0, 1, 6, 3, 0, 2, 3, 6, 0, 8, 2, 0, 7, 8, 7,	7, 7, 6, 0, 8, 1, 9, 1, 0, 3,	7, 7, 6, 0, 8, 1, 9, 1, 0, 3,
1, 3, 3, 5, 0, 0, 1, 5, 2, 7, 5, 2, 5, 1, 6, 4, 9,	5, 4, 9, 1, 5, 6, 8, 6, 3, 4,	5, 4, 9, 1, 5, 6, 8, 6, 3, 4,
9, 7, 2, 1, 3, 3, 3, 2, 2, 5, 9, 0, 7, 0, 0, 1, 0,	6, 3, 3, 3, 8, 1, 6, 5, 0, 8,	6, 3, 3, 3, 8, 1, 6, 5, 0, 8,
6, 2, 1, 1, 9, 4, 3, 3, 4, 9, 9, 5, 7, 2, 3, 7, 8,	4, 1, 6, 9, 1, 8, 0, 5, 5, 8,	4, 1, 6, 9, 1, 8, 0, 5, 5, 8,
4, 2, 4, 0, 0, 7, 5, 7, 1, 9, 5, 7, 7, 6, 0, 6, 7,	6, 1, 8, 7, 7, 9, 6, 8, 4, 7,	6, 1, 8, 7, 7, 9, 6, 8, 4, 7,
8, 5, 9, 9, 4, 9, 2, 6, 8, 4, 1, 1, 8, 1, 0, 2, 4,	5, 5, 0, 8, 8, 2, 1, 6, 3, 0,	5, 5, 0, 8, 8, 2, 1, 6, 3, 0,
6, 3, 0, 8, 9, 1, 6, 6, 2, 3, 6, 6, 3, 9, 8, 7, 5,	2, 8, 9, 7, 7, 6, 5, 8, 3, 3,	2, 8, 9, 7, 7, 6, 5, 8, 3, 3,
5, 8, 3, 8, 4, 1, 6, 6, 6, 3, 5, 4, 3, 6, 2, 3, 5,	9, 3, 9, 5, 1, 7, 1, 1, 8, 1,	9, 3, 9, 5, 1, 7, 1, 1, 8, 1,
3, 4, 1, 3, 1, 0, 1, 9, 7, 8, 7, 2, 8, 5, 6, 5, 6,	7, 8, 6, 1, 0, 3, 4, 1, 7, 0,	7, 8, 6, 1, 0, 3, 4, 1, 7, 0,
3, 6, 4, 8, 0, 0, 6, 7, 2, 4, 5, 5, 2, 9, 6, 7, 0,	4, 1, 6, 2, 2, 1, 7, 7, 0, 0,	4, 1, 6, 2, 2, 1, 7, 7, 0, 0,
8, 7, 9, 1, 8, 9, 6, 7, 7, 8, 5, 5, 4, 3, 7, 1, 1,	2, 5, 4, 9, 8, 1, 3, 1, 1, 3,	2, 5, 4, 9, 8, 1, 3, 1, 1, 3,
6, 3, 0, 9, 7, 7, 8, 7, 1, 5, 8, 6, 0, 1, 4, 6, 1,	2, 7, 8, 0, 9, 3, 4, 3, 2, 9,	2, 7, 8, 0, 9, 3, 4, 3, 2, 9,
6, 4, 2, 1, 3, 0, 9, 5, 3, 2, 3, 5, 1, 6, 0, 4, 5,	8, 7, 2, 5, 4, 0, 4, 8, 5, 3,	8, 7, 2, 5, 4, 0, 4, 8, 5, 3,
0, 9, 5, 3, 2, 6, 4, 0, 4, 5, 1, 4, 7, 5, 1, 6, 9,	9, 3, 9, 6, 2, 7, 1, 7, 7, 5,	9, 3, 9, 6, 2, 7, 1, 7, 7, 5,
6, 6, 0, 3, 1, 6, 9, 9, 6, 5, 1, 3, 6, 4, 7, 3, 9,	6, 1, 7, 7, 7, 8, 4, 6, 0, 2,	6, 1, 7, 7, 8, 4, 6, 0, 2,
6, 6, 8, 8, 2, 9, 1, 0, 8, 6, 7, 4, 1, 6, 1, 4, 7,	3, 5, 8, 0, 1, 4, 9, 6, 1, 7,	3, 5, 8, 0, 1, 4, 9, 6, 1, 7,
3, 5, 3, 1, 3, 8, 0, 1, 9, 7, 6, 4, 9, 8, 6, 0, 0,	5, 3, 3, 8, 2, 6, 2, 7, 3, 0,	5, 3, 3, 8, 2, 6, 2, 7, 3, 0,
3, 6, 0, 0, 3, 4, 7, 5, 5, 8, 5, 2, 4, 5, 2, 4, 5,	1, 3, 8, 7, 0, 9, 7, 4, 4, 4,	1, 3, 8, 7, 0, 9, 7, 4, 4, 4,
4, 8, 6, 9, 2, 4, 9, 7, 4, 6, 1, 3, 0, 8, 6, 1, 1,	6, 0, 8, 2, 6, 9, 9, 5, 3, 7,	6, 0, 8, 2, 6, 9, 9, 5, 3, 7,
2, 6, 8, 4, 9, 4, 3, 6, 5, 0, 3, 6, 4, 1, 8, 7, 7,	9, 4, 8, 8, 6, 1, 7, 9, 4, 8,	9, 4, 8, 8, 6, 1, 7, 9, 4, 8,
2, 3, 6, 2, 8, 4, 3, 1, 7, 8, 2, 4, 0, 7, 7, 4, 9,	0, 0, 2, 5, 8, 6, 3, 3, 1, 2,	0, 0, 2, 5, 8, 6, 3, 3, 1, 2,

Test	Expected	Got
8, 5, 8, 1, 0, 0, 9, 6, 3, 1, 5, 9, 9, 3, 2, 7, 8,	5, 5, 2, 9, 4, 8, 8, 6, 9, 1,	5, 5, 2, 9, 4, 8, 8, 6, 9, 1,
7, 1, 8, 1, 2, 7, 4, 2, 4, 9, 2, 3, 8, 8, 5, 0, 1,	3, 9, 5, 3, 0, 7, 2, 1, 2, 4,	3, 9, 5, 3, 0, 7, 2, 1, 2, 4,
3, 0, 3, 8, 6, 5, 1, 8, 1, 3, 8, 6, 5, 6, 5, 4, 8,	4, 6, 0, 2, 8, 7, 1, 6, 7, 4,	4, 6, 0, 2, 8, 7, 1, 6, 7, 4,
3, 2, 3, 5, 0, 1, 9, 0, 9, 2, 3, 5, 3, 0, 4, 0, 8,	5, 1, 9, 4, 4, 7, 0, 3, 6, 0,	5, 1, 9, 4, 4, 7, 0, 3, 6, 0,
3, 4, 2, 6, 4, 4, 6, 1, 4, 0, 6, 9, 7, 7, 7, 6, 6,	0, 7, 8, 0, 4, 5, 7, 7, 6, 5,	0, 7, 8, 0, 4, 5, 7, 7, 6, 5,
1, 6, 1, 8, 2, 3, 9, 5, 7, 3, 9, 9, 6, 7, 9, 3, 6,	0, 3, 1, 0, 7, 0, 5, 0, 3, 1,	0, 3, 1, 0, 7, 0, 5, 0, 3, 1,
7, 7, 9, 2, 0, 7, 1, 6, 7, 8, 3, 8, 8, 4, 6, 8, 0,	2, 1, 9, 3, 4, 4, 0, 0, 2, 9,	2, 1, 9, 3, 4, 4, 0, 0, 2, 9,
4, 2, 9, 0, 4, 2, 7, 9, 6, 9, 9, 1, 5, 9, 4, 1, 4,	6, 3, 8, 9, 6, 7, 6, 9, 5, 3,	6, 3, 8, 9, 6, 7, 6, 9, 5, 3,
5, 5, 1, 0, 1, 3, 9, 6, 0, 4, 5, 5, 7, 1, 7, 1, 4,	2, 1, 3, 0, 2, 7, 9, 8, 8, 5,	2, 1, 3, 0, 2, 7, 9, 8, 8, 5,
5, 6, 1, 7, 3, 9, 0, 9, 5, 9, 5, 6, 2, 0, 7, 4, 0,	4, 4, 2, 6, 5, 4, 2, 0, 0, 2,	4, 4, 2, 6, 5, 4, 2, 0, 0, 2,
1, 6, 7, 3, 2, 7, 0, 6, 3, 1, 4, 3, 4, 3, 9, 9, 6,	7, 8, 8, 7, 9, 7, 9, 8, 8, 2,	7, 8, 8, 7, 9, 7, 9, 8, 8, 2,
0, 7, 9, 4, 3, 8, 1, 5, 4, 3, 2, 3, 1, 9, 9, 2, 1,	6, 0, 9, 0, 2, 6, 1, 9, 2, 9,	6, 0, 9, 0, 2, 6, 1, 9, 2, 9,
6, 9, 8, 1, 6, 2, 8, 4, 6, 8, 6, 5, 6, 9, 4, 1, 2,	2, 5, 8, 6, 8, 0, 1, 5, 0, 6,	2, 5, 8, 6, 8, 0, 1, 5, 0, 6,
1, 2, 2, 3, 4, 0, 7, 1, 0, 7, 9, 1, 2, 9, 6, 1, 6,	9, 7, 7, 2, 1, 5, 6, 1, 7, 0,	9, 7, 7, 2, 1, 5, 6, 1, 7, 0,
9, 3, 2, 1, 9, 7, 8, 6, 5, 2, 0, 3, 3, 5, 3, 5, 5,	0, 7, 0, 0, 2, 8, 3, 3, 2, 9,	0, 7, 0, 0, 2, 8, 3, 3, 2, 9,
9, 5, 7, 6, 1, 5, 1, 0, 7, 1, 8, 6, 7, 7, 8, 3, 9,	8, 9, 8, 9, 9, 1, 7, 6, 2, 5,	8, 9, 8, 9, 9, 1, 7, 6, 2, 5,
0, 0, 6, 0, 0, 6, 8, 6, 9, 6, 1, 3, 1, 7, 5, 3, 5,	1, 2, 5, 7, 0, 8, 2, 8, 7, 7,	1, 2, 5, 7, 0, 8, 2, 8, 7, 7,
8, 3, 5, 8, 6, 1, 5, 6, 2, 2, 4, 6, 0, 2, 6, 7, 8,	6, 1, 2, 8, 2, 5, 8, 0, 5, 7,	6, 1, 2, 8, 2, 5, 8, 0, 5, 7,
0, 5, 9, 5, 1, 1, 2, 3, 4, 7, 5, 7, 0, 8, 2, 4, 4,	0, 7, 0, 2, 5, 5, 0, 3, 1, 8,	0, 7, 0, 2, 5, 5, 0, 3, 1, 8,
0, 1, 8, 8, 3, 1, 6, 4, 2, 8, 3, 8, 6, 0, 7, 4, 9,	5, 7, 6, 8, 0, 0, 5, 1, 9, 0,	5, 7, 6, 8, 0, 0, 5, 1, 9, 0,
8, 2, 2, 5, 8, 7, 2, 7, 4, 3, 5, 2, 8, 3, 2, 9, 5,	1, 3, 3, 3, 5, 5, 0, 6, 8, 5,	1, 3, 3, 3, 5, 5, 0, 6, 8, 5,
1, 5, 1, 7, 7, 3, 5, 2, 1, 8, 1, 0, 5, 0, 2, 0, 6,	4, 7, 7, 8, 0, 3, 5, 9, 2, 8,	4, 7, 7, 8, 0, 3, 5, 9, 2, 8,
3, 0, 4, 3, 7, 3, 5, 7, 6, 6, 0, 8, 2, 7, 1, 3, 4,	7, 8, 4, 5, 7, 6, 4, 9, 7, 6,	7, 8, 4, 5, 7, 6, 4, 9, 7, 6,
6, 8, 8, 2, 8, 4, 7, 6, 2, 0, 0, 0, 7, 6, 9, 2, 4,	1, 1, 1, 6, 0, 1, 0, 7, 5, 1,	1, 1, 1, 6, 0, 1, 0, 7, 5, 1,
7, 3, 1, 1, 7, 0, 3, 4, 5, 6, 9, 0, 5, 5, 9, 5, 1,	9, 9, 2, 7, 4, 9, 9, 0, 6, 3,	9, 9, 2, 7, 4, 9, 9, 0, 6, 3,
1, 3, 5, 5, 0, 9, 9, 6, 4, 7, 3, 9, 3, 5, 1, 2, 1,	1,snip 2, 7, 3, 3, 1,	1,snip 2, 7, 3, 3, 1,
0, 8, 1, 7, 9, 8, 8, 3, 7, 0, 8, 0, 8, 2, 9, 9, 1,	3, 7, 2, 1, 8, 4, 2, 6, 7, 2,	3, 7, 2, 1, 8, 4, 2, 6, 7, 2,
0, 8, 2, 9, 7, 2, 1, 1, 7, 6, 1, 4, 6, 2, 0, 7, 1,	5, 3, 8, 6, 8, 4, 0, 7, 5, 6,	5, 3, 8, 6, 8, 4, 0, 7, 5, 6,
7, 7, 4, 8, 8, 0, 8, 7, 5, 7, 0, 3, 1, 5, 3, 8, 8,	1, 4, 5, 2, 6, 5, 2, 9, 1, 5,	1, 4, 5, 2, 6, 5, 2, 9, 1, 5,
5, 7, 6, 5, 0, 1, 7, 0, 0, 9, 6, 4, 7, 2, 2, 4, 2,	1, 3, 8, 9, 0, 7, 7, 4, 9, 4,	1, 3, 8, 9, 0, 7, 7, 4, 9, 4,
5, 7, 8, 9, 3, 0, 1, 3, 9, 7, 4, 7, 9, 7, 0, 6, 1,	4, 7, 0, 0, 9, 0, 7, 9, 5, 4,	4, 7, 0, 0, 9, 0, 7, 9, 5, 4,
2, 9, 8, 3, 9, 5, 5, 7, 9, 7, 0, 0, 3, 6, 4, 7, 0,	8, 5, 9, 1, 8, 8, 9, 7, 1, 6,	8, 5, 9, 1, 8, 8, 9, 7, 1, 6,
1, 3, 4, 0, 5, 0, 2, 8, 7, 9, 6, 1, 0, 8, 2, 4, 7,	2, 8, 9, 0, 4, 1, 8, 1, 3, 3,	2, 8, 9, 0, 4, 1, 8, 1, 3, 3,
2, 0, 7, 0, 8, 4, 1, 7, 6, 8, 9, 7, 2, 4, 9, 1, 3,	1, 6, 4, 7, 0, 0, 3, 2, 5, 9,	1, 6, 4, 7, 0, 0, 3, 2, 5, 9,
7, 9, 8, 6, 0, 4, 3, 2, 6, 9, 3, 0, 8, 0, 0, 2, 4,	0, 5, 9, 7, 1, 1, 9, 6, 3, 4,	0, 5, 9, 7, 1, 1, 9, 6, 3, 4,
4, 9, 3, 4, 9, 1, 4, 2, 2, 9, 5, 7, 8, 9, 7, 0, 9,	3, 6, 7, 4, 4, 7, 4, 7, 8, 6,	3, 6, 7, 4, 4, 7, 4, 7, 8, 6,

Test	Expected	Got
5, 4, 7, 2, 1, 3, 3, 2, 7, 6, 0, 0, 1, 2, 7, 3, 2,	5, 5, 1, 5, 9, 8, 4, 6, 9, 6,	5, 5, 1, 5, 9, 8, 4, 6, 9, 6,
8, 7, 1, 0, 6, 8, 8, 8, 2, 8, 9, 5, 6, 5, 0, 5, 9,	8, 5, 0, 8, 2, 9, 1, 3, 7, 9,	8, 5, 0, 8, 2, 9, 1, 3, 7, 9,
7, 2, 2, 3, 9, 3, 1, 8, 6, 9, 1, 1, 4, 9, 0, 9, 1,	5, 2, 1, 8, 0, 5, 9, 4, 9, 5,	5, 2, 1, 8, 0, 5, 9, 4, 9, 5,
3, 1, 9, 1, 0, 5, 3, 6, 9, 0, 3, 6, 5, 6, 1, 0, 7,	6, 3, 2, 8, 2, 8, 5, 8, 8, 7,	6, 3, 2, 8, 2, 8, 5, 8, 8, 7,
4, 2, 3, 3, 1, 4, 7, 3, 8, 2, 5, 6, 8, 4, 8, 6, 7,	1, 4, 4, 6, 2, 6, 1, 7, 0, 4,	1, 4, 4, 6, 2, 6, 1, 7, 0, 4,
4, 8, 3, 7, 4, 7, 1, 4, 0, 3, 8, 1, 0, 2, 3, 4, 9,	9, 9, 6, 3, 1, 3, 3, 3, 5, 8,	9, 9, 6, 3, 1, 3, 3, 3, 5, 8,
1, 5, 0, 6, 3, 4, 9, 4, 3, 3, 6, 3, 6, 8, 1, 9, 7,	7, 2, 5, 1, 3, 8, 2, 8, 1, 5,	7, 2, 5, 1, 3, 8, 2, 8, 1, 5,
4, 5, 7, 4, 9, 5, 0, 9, 7, 4, 1, 8, 0, 7, 5, 0, 2,	2, 0, 6, 6, 5, 5, 4, 5, 7, 9,	2, 0, 6, 6, 5, 5, 4, 5, 7, 9,
7, 8, 0, 9, 4, 5, 2, 0, 9, 6, 4, 7, 0};	3, 5, 3, 1, 6, 9, 0, 9, 5, 8,	3, 5, 3, 1, 6, 9, 0, 9, 5, 8,
int k = 990;	8, 4, 6, 0, 9, 4, 0, 8, 1, 2,	8, 4, 6, 0, 9, 4, 0, 8, 1, 2,
LLNode* head = LLNode::createWithIterators(arr, arr	3, 9, 9, 6, 9, 2, 8, 6, 5, 4,	3, 9, 9, 6, 9, 2, 8, 6, 5, 4,
+ sizeof(arr) / sizeof(int));	9, 2, 4, 2, 3, 1, 8, 6, 8, 3,	9, 2, 4, 2, 3, 1, 8, 6, 8, 3,
LLNode::printList(head);	3, 5, 4, 7, 1, 1, 2, 7, 5, 8,	3, 5, 4, 7, 1, 1, 2, 7, 5, 8,
cout << "\n";	7, 7, 2, 3, 5, 3, 4, 7, 2, 8,	7, 7, 2, 3, 5, 3, 4, 7, 2, 8,
<pre>LLNode* newhead = rotateLinkedList(head, k);</pre>	5, 6, 9, 7, 1, 4, 0, 0, 3, 6,	5, 6, 9, 7, 1, 4, 0, 0, 3, 6,
LLNode::printList(newhead);	3, 0, 4, 4, 0, 4, 3, 7, 1, 8,	3, 0, 4, 4, 0, 4, 3, 7, 1, 8,
	5, 1, 3, 0, 9, 0, 2, 2, 5, 3,	5, 1, 3, 0, 9, 0, 2, 2, 5, 3,
	3, 8, 7, 9, 3, 9, 5, 9, 0, 7,	3, 8, 7, 9, 3, 9, 5, 9, 0, 7,
	7, 0, 2, 9, 8, 4, 0, 6, 0, 4,	7, 0, 2, 9, 8, 4, 0, 6, 0, 4,
	2, 3, 3, 4, 9, 7, 2, 8, 3, 1,	2, 3, 3, 4, 9, 7, 2, 8, 3, 1,
	9, 2, 7, 9, 8, 7, 5, 7, 1, 9,	9, 2, 7, 9, 8, 7, 5, 7, 1, 9,
	3, 9, 4, 2, 9, 1, 1, 0, 4, 6,	3, 9, 4, 2, 9, 1, 1, 0, 4, 6,
	3, 8, 6, 9, 3, 9, 5, 1, 8, 0,	3, 8, 6, 9, 3, 9, 5, 1, 8, 0,
	6, 7, 6, 4, 7, 7, 6, 7, 4, 3,	6, 7, 6, 4, 7, 7, 6, 7, 4, 3,
	8, 4, 4, 3, 3, 6, 8, 3, 7, 4,	8, 4, 4, 3, 3, 6, 8, 3, 7, 4,
	5, 4, 7, 7, 5, 1, 6, 8, 2, 8,	5, 4, 7, 7, 5, 1, 6, 8, 2, 8,
	0, 8, 0, 8, 8, 7, 3, 6, 5, 2,	0, 8, 0, 8, 8, 7, 3, 6, 5, 2,
	4, 3, 9, 8, 7, 6, 3, 0, 4, 4,	4, 3, 9, 8, 7, 6, 3, 0, 4, 4,
	6, 2, 3, 5, 6, 0, 9, 2, 1, 9,	6, 2, 3, 5, 6, 0, 9, 2, 1, 9,
	4, 8, 9, 8, 9, 1, 1, 5, 7, 8,	4, 8, 9, 8, 9, 1, 1, 5, 7, 8,
	0, 0, 1, 1, 2, 7, 8, 9, 7, 2,	0, 0, 1, 1, 2, 7, 8, 9, 7, 2,
	3, 2, 8, 9, 5, 1, 8, 9, 9, 5,	3, 2, 8, 9, 5, 1, 8, 9, 9, 5,
	2, 2, 0, 6, 5, 6, 9, 5, 2, 6,	2, 2, 0, 6, 5, 6, 9, 5, 2, 6,
	2, 3, 7, 4, 2, 6, 1, 9, 8, 0,	2, 3, 7, 4, 2, 6, 1, 9, 8, 0,
	0, 4, 7, 2, 1, 6, 1, 8, 6, 7,	0, 4, 7, 2, 1, 6, 1, 8, 6, 7,
	1	1, 2, 6, 1, 4, 1, 6, 2, 1, 9,

Test	Expected	Got
	5, 0, 0, 4, 6, 2, 5, 3, 3, 0,	5, 0, 0, 4, 6, 2, 5, 3, 3, 0,
	5, 0, 2, 2, 7, 6, 1, 1, 3, 9,	5, 0, 2, 2, 7, 6, 1, 1, 3, 9,
	5, 6, 0, 3, 4, 2, 8, 3, 7, 2,	5, 6, 0, 3, 4, 2, 8, 3, 7, 2,
	9, 6, 1, 8, 3, 1, 3, 8, 5, 1,	9, 6, 1, 8, 3, 1, 3, 8, 5, 1,
	9, 0, 0, 4, 3, 4, 6, 4, 6, 7,	9, 0, 0, 4, 3, 4, 6, 4, 6, 7,
	8, 5, 2, 5, 6, 1, 6, 8, 5, 2,	8, 5, 2, 5, 6, 1, 6, 8, 5, 2,
	1, 1, 0, 4, 7, 0, 4, 9, 1, 4,	1, 1, 0, 4, 7, 0, 4, 9, 1, 4,
	2, 1, 4, 4, 5, 7, 2, 1, 2, 5,	2, 1, 4, 4, 5, 7, 2, 1, 2, 5,
	3, 8, 0, 6, 6, 0, 5, 2, 7, 5,	3, 8, 0, 6, 6, 0, 5, 2, 7, 5,
	7, 5, 7, 9, 0, 8, 3, 3, 4, 0,	7, 5, 7, 9, 0, 8, 3, 3, 4, 0,
	3, 8, 4, 1, 4, 0, 8, 4, 8, 3,	3, 8, 4, 1, 4, 0, 8, 4, 8, 3,
	1, 2, 5, 6, 8, 2, 9, 2, 6, 5,	1, 2, 5, 6, 8, 2, 9, 2, 6, 5,
	5, 5, 1, 0, 5, 1, 9, 6, 2, 2,	5, 5, 1, 0, 5, 1, 9, 6, 2, 2,
	3, 0, 7, 6, 8, 7, 7, 8, 2, 0,	3, 0, 7, 6, 8, 7, 7, 8, 2, 0,
	9, 3, 1, 5, 3, 1, 4, 6, 7, 5,	9, 3, 1, 5, 3, 1, 4, 6, 7, 5,
	9, 9, 3, 8, 5, 2, 3, 4, 0, 5,	9, 9, 3, 8, 5, 2, 3, 4, 0, 5,
	9, 1, 7, 2, 9, 8, 2, 0, 7, 0,	9, 1, 7, 2, 9, 8, 2, 0, 7, 0,
	9, 0, 2, 6, 6, 8, 5, 5, 6, 0,	9, 0, 2, 6, 6, 8, 5, 5, 6, 0,
	1, 8, 0, 9, 2, 4, 9, 8, 3, 6,	1, 8, 0, 9, 2, 4, 9, 8, 3, 6,
	3, 9, 2, 2, 6, 5, 7, 3, 5, 0,	3, 9, 2, 2, 6, 5, 7, 3, 5, 0,
	6, 6, 8, 4, 6, 7, 8, 6, 9, 4,	6, 6, 8, 4, 6, 7, 8, 6, 9, 4,
	1, 3, 2, 1, 8, 0, 0, 7, 2, 1,	1, 3, 2, 1, 8, 0, 0, 7, 2, 1,
	5, 3, 4, 3, 2, 4, 1, 3, 0, 3,	5, 3, 4, 3, 2, 4, 1, 3, 0, 3,
	9, 8, 6, 3, 5, 5, 9, 9, 3, 1,	9, 8, 6, 3, 5, 5, 9, 9, 3, 1,
	2, 4, 7, 4, 0, 3, 7, 8, 4, 3,	2, 4, 7, 4, 0, 3, 7, 8, 4, 3,
	4, 4, 3, 0, 5, 8, 0, 8, 2, 6,	4, 4, 3, 0, 5, 8, 0, 8, 2, 6,
	0, 4, 0, 3, 4, 4, 8, 1, 2, 0,	0, 4, 0, 3, 4, 4, 8, 1, 2, 0,
	0, 0, 1, 9, 2, 4, 6, 6, 9, 4,	0, 0, 1, 9, 2, 4, 6, 6, 9, 4,
	8, 9, 5, 2, 2, 4, 9, 8, 6, 8,	8, 9, 5, 2, 2, 4, 9, 8, 6, 8,
	5, 9, 5, 8, 1, 0, 5, 1, 4, 4,	5, 9, 5, 8, 1, 0, 5, 1, 4, 4,
	6, 3, 6, 5, 2, 6, 2, 0, 7, 4,	
	1, 2, 7, 3, 4, 4, 9, 3, 9, 2,	
	9, 1, 3, 0, 4, 1, 0, 2, 4, 9,	9, 1, 3, 0, 4, 1, 0, 2, 4, 9,
	3, 3, 1, 3, 0, 8, 8, 7, 4, 5,	3, 3, 1, 3, 0, 8, 8, 7, 4, 5,
	9, 9, 9, 6, 6, 4, 4, 2, 5, 0,	9, 9, 9, 6, 6, 4, 4, 2, 5, 0,
	1, 0, 8, 9, 0, 4, 8, 5, 6, 8,	1, 0, 8, 9, 0, 4, 8, 5, 6, 8,

1 0 0 1 9 2 6 1 0 0 1 0 0 1 9 2 6	
1, 0, 9, 1, 8, 2, 6, 1, 0, 9, 1, 0, 9, 1, 8, 2, 6	5, 1, 0, 9,
9, 2, 5, 9, 4, 1, 7, 5, 6, 5, 9, 2, 5, 9, 4, 1, 7	7, 5, 6, 5,
4, 3, 9, 3, 9, 4, 1, 6, 7, 6, 4, 3, 9, 3, 9, 4, 1	1, 6, 7, 6,
3, 1, 6, 6, 5, 2, 5, 9, 7, 6, 3, 1, 6, 6, 5, 2, 5	5, 9, 7, 6,
9, 3, 3, 1, 2, 5, 0, 2, 5, 6, 9, 3, 3, 1, 2, 5, 6	ð, 2, 5, 6,
7, 2, 3, 0, 7, 9, 0, 2, 2, 9, 7, 2, 3, 0, 7, 9, 6	ð, 2, 2, 9,
5, 9, 1, 9, 6, 1, 7, 4, 1, 6, 5, 9, 1, 9, 6, 1, 7	7, 4, 1, 6,
7, 0, 5, 9, 8, 1, 2, 2, 5, 6, 7, 0, 5, 9, 8, 1, 2	2, 2, 5, 6,
3, 3, 4, 8, 8, 1, 0, 5, 2, 7, 3, 3, 4, 8, 8, 1, 6	ð, 5, 2, 7,
1, 6, 7, 3, 1, 1, 8, 9, 7, 6, 1, 6, 7, 3, 1, 1, 8	3, 9, 7, 6,
3, 3, 4, 0, 0, 9, 2, 6, 2, 4, 3, 3, 4, 0, 0, 9, 2	2, 6, 2, 4,
2, 2, 1, 3, 6, 6, 6, 8, 5, 8, 2, 2, 1, 3, 6, 6, 6	5, 8, 5, 8,
8, 1, 3, 6, 9, 6, 5, 2, 3, 0, 8, 1, 3, 6, 9, 6, 5	5, 2, 3, 0,
2, 2, 1, 0, 1, 9, 1, 4, 4, 9, 2, 2, 1, 0, 1, 9, 1	1, 4, 4, 9,
3, 2, 3, 4, 0, 3, 4, 5, 8, 3, 3, 2, 3, 4, 0, 3, 4	1, 5, 8, 3,
6, 3, 5, 6, 8, 4, 1, 1, 5, 1, 6, 3, 5, 6, 8, 4, 1	l, 1, 5, 1,
2, 8, 2, 5, 0, 2, 8, 9, 1, 2, 2, 8, 2, 5, 0, 2, 8	3, 9, 1, 2,
5, 4, 9, 2, 7, 0, 5, 1, 5, 6, 5, 4, 9, 2, 7, 0, 5	5, 1, 5, 6,
2, 2, 9, 3, 9, 6, 9, 8, 2, 2, 9, 3, 9, 3, 9	9, 6, 9, 8,
3, 3, 1, 8, 8, 5, 4, 3, 5, 7, 3, 3, 1, 8, 8, 5, 4	1, 3, 5, 7,
5, 8, 5, 5, 8, 0, 2, 5, 4, 0, 5, 8, 5, 5, 8, 0, 2	2, 5, 4, 0,
7, 8, 9, 0, 2, 6, 4, 4, 2, 3, 7, 8, 9, 0, 2, 6, 4	1, 4, 2, 3,
8, 3, 0, 3, 8, 4, 2, 6, 6, 6, 8, 3, 0, 3, 8, 4, 2	2, 6, 6, 6,
4, 2, 3, 0, 2, 6, 9, 2, 8, 3, 4, 2, 3, 0, 2, 6, 9	9, 2, 8, 3,
8, 0, 6, 8, 3, 5, 0, 9, 6, 0, 8, 0, 6, 8, 3, 5, 6	0, 9, 6, 0,
7, 2, 5, 0, 3, 2, 8, 8, 2, 5, 7, 2, 5, 0, 3, 2, 8	3, 8, 2, 5,
5, 3, 6, 9, 4, 9, 2, 2, 9, 6, 5, 3, 6, 9, 4, 9, 2	2, 2, 9, 6,
6, 7, 5, 7, 4, 6, 9, 8, 9, 7, 6, 7, 5, 7, 4, 6, 9	3, 8, 9, 7,
9, 2, 7, 0, 4, 9, 0, 6, 2, 8, 9, 2, 7, 0, 4, 9, 6	
1, 3, 0, 3, 4, 7, 0, 7, 2, 1, 1, 3, 0, 3, 4, 7, 6	
7, 4, 2, 0, 6, 5, 6, 3, 6, 6, 7, 4, 2, 0, 6, 5, 6	
9, 1, 3, 0, 8, 4, 9, 7, 1, 6, 9, 1, 3, 0, 8, 4, 9	
8, 4, 9, 8, 3, 4, 0, 2, 2, 4, 8, 4, 9, 8, 3, 4, 6	
6, 2, 7, 9, 0, 3, 8, 0, 6, 0, 6, 2, 7, 9, 0, 3, 8	
6, 7, 7, 9, 6, 0, 4, 7, 8, 4, 6, 7, 7, 9, 6, 0, 4	
4, 2, 7, 0, 0, 8, 0, 8, 8, 5, 4, 2, 7, 0, 0, 8, 6), 8, 8, 5,

Test	Expected	Got
	7, 6, 2, 8, 5, 5, 3, 7, 1,	2, 7, 6, 2, 8, 5, 5, 3, 7, 1, 2,
	8, 8, 4, 1, 8, 1, 8, 7, 8,	4, 8, 8, 4, 1, 8, 1, 8, 7, 8, 4,
	0, 1, 6, 3, 0, 2, 3, 6, 0,	8, 0, 1, 6, 3, 0, 2, 3, 6, 0, 8,
	2, 0, 7, 8, 7, 1, 3, 3, 5,	0, 2, 0, 7, 8, 7, 1, 3, 3, 5, 0,
	0, 1, 5, 2, 7, 5, 2, 5, 1,	6, 0, 1, 5, 2, 7, 5, 2, 5, 1, 6,
	4, 9, 9, 7, 2, 1, 3, 3, 3,	2, 4, 9, 9, 7, 2, 1, 3, 3, 3, 2,
	2, 5, 9, 0, 7, 0, 0, 1, 0,	6, 2, 5, 9, 0, 7, 0, 0, 1, 0, 6,
	2, 1, 1, 9, 4, 3, 3, 4, 9,	9, 2, 1, 1, 9, 4, 3, 3, 4, 9, 9,
	5, 7, 2, 3, 7, 8, 4, 2, 4,	0, 5, 7, 2, 3, 7, 8, 4, 2, 4, 0,
	0, 7, 5, 7, 1, 9, 5, 7, 7,	6, 0, 7, 5, 7, 1, 9, 5, 7, 7, 6,
	0, 6, 7, 8, 5, 9, 9, 4, 9,	2, 0, 6, 7, 8, 5, 9, 9, 4, 9, 2,
	6, 8, 4, 1, 1, 8, 1, 0, 2,	4, 6, 8, 4, 1, 1, 8, 1, 0, 2, 4,
	6, 3, 0, 8, 9, 1, 6, 6, 2,	3, 6, 3, 0, 8, 9, 1, 6, 6, 2, 3,
	6, 6, 3, 9, 8, 7, 5, 5, 8,	3, 6, 6, 3, 9, 8, 7, 5, 5, 8, 3,
	8, 4, 1, 6, 6, 6]	8, 4, 1, 6, 6, 6]

Test	Expected	Got	
int arr[] = {9, 9, 7, 1, 0, 8, 1, 7, 1, 6, 9, 1, 8,	[9, 9, 7, 1, 0, 8, 1, 7, 1, 6,	[9, 9, 7, 1, 0, 8, 1, 7, 1, 6,	~
4, 3, 4, 8, 5, 7, 0, 0, 0, 2, 1, 9, 5, 5, 3, 3, 4,	9, 1, 8, 4, 3, 4, 8, 5, 7, 0,	9, 1, 8, 4, 3, 4, 8, 5, 7, 0,	
2, 0, 1, 4, 6, 2, 9, 0, 9, 9, 0, 2, 7, 3, 5, 9, 8,	0, 0, 2, 1, 9, 5, 5, 3, 3, 4,	0, 0, 2, 1, 9, 5, 5, 3, 3, 4,	
2, 5, 4, 3, 4, 6, 3, 8, 1, 2, 0, 3, 3, 9, 6, 3, 4,	2, 0, 1, 4, 6, 2, 9, 0, 9, 9,	2, 0, 1, 4, 6, 2, 9, 0, 9, 9,	
5, 4, 9, 3, 6, 5, 2, 5, 0, 1, 3, 3, 0, 5, 9, 2, 6,	0, 2, 7, 3, 5, 9, 8, 2, 5, 4,	0, 2, 7, 3, 5, 9, 8, 2, 5, 4,	
5, 4, 9, 6, 4, 7, 5, 0, 3, 4, 3, 9, 2, 7, 5, 5, 5,	3, 4, 6, 3, 8, 1, 2, 0, 3, 3,	3, 4, 6, 3, 8, 1, 2, 0, 3, 3,	
2, 7, 5, 3, 4, 9, 3, 5, 1, 1, 4, 1, 9, 9, 0, 8, 4,	9, 6, 3, 4, 5, 4, 9, 3, 6, 5,	9, 6, 3, 4, 5, 4, 9, 3, 6, 5,	
6, 4, 2, 1, 0, 5, 4, 0, 4, 4, 0, 0, 8, 4, 5, 3, 7,	2, 5, 0, 1, 3, 3, 0, 5, 9, 2,	2, 5, 0, 1, 3, 3, 0, 5, 9, 2,	
0, 7, 1, 6, 0, 2, 8, 6, 8, 1, 6, 5, 6, 5, 7, 7, 8,	6, 5, 4, 9, 6, 4, 7, 5, 0, 3,	6, 5, 4, 9, 6, 4, 7, 5, 0, 3,	
1, 7, 3, 1, 7, 1, 9, 2, 4, 6, 2, 1, 8, 8, 4, 0, 9,	4, 3, 9, 2, 7, 5, 5, 5, 2, 7,	4, 3, 9, 2, 7, 5, 5, 5, 2, 7,	
0, 8, 8, 6, 6, 8, 8, 2, 2, 1, 2, 2, 8, 7, 8, 4, 3,	5, 3, 4, 9, 3, 5, 1, 1, 4, 1,	5, 3, 4, 9, 3, 5, 1, 1, 4, 1,	
6, 4, 1, 0, 9, 1, 4, 0, 6, 1, 6, 1, 7, 6, 1, 9, 6,	9, 9, 0, 8, 4, 6, 4, 2, 1, 0,	9, 9, 0, 8, 4, 6, 4, 2, 1, 0,	
5, 5, 9, 4, 7, 8, 8, 5, 4, 9, 2, 7, 1, 1, 6, 9, 6,	5, 4, 0, 4, 4, 0, 0, 8, 4, 5,	5, 4, 0, 4, 4, 0, 0, 8, 4, 5,	
9, 8, 7, 8, 8, 0, 3, 0, 8, 6, 0, 3, 3, 5, 1, 9, 4,	3, 7, 0, 7, 1, 6, 0, 2, 8, 6,	3, 7, 0, 7, 1, 6, 0, 2, 8, 6,	
5, 2, 8, 6, 3, 0, 3, 9, 5, 2, 4, 2, 4, 1, 4, 1, 3,	8, 1, 6, 5, 6, 5, 7, 7, 8, 1,	8, 1, 6, 5, 6, 5, 7, 7, 8, 1,	
7, 4, 0, 0, 1, 2, 8, 4, 8, 1, 1, 6, 3, 8, 9, 7, 7,	7, 3, 1, 7, 1, 9, 2, 4, 6, 2,	7, 3, 1, 7, 1, 9, 2, 4, 6, 2,	
5, 8, 1, 8, 3, 4, 9, 5, 5, 1, 3, 4, 9, 2, 3, 8, 9,	1, 8, 8, 4, 0, 9, 0, 8, 8, 6,	1, 8, 8, 4, 0, 9, 0, 8, 8, 6,	
1, 9, 7, 5, 7, 0, 0, 4, 9, 8, 9, 4, 3, 2, 4, 9, 3,	6, 8, 8, 2, 2, 1, 2, 2, 8, 7,	6, 8, 8, 2, 2, 1, 2, 2, 8, 7,	
4, 5, 6, 8, 6, 7, 9, 0, 4, 5, 6, 2, 4, 8, 4, 5, 2,	8, 4, 3, 6, 4, 1, 0, 9, 1, 4,	8, 4, 3, 6, 4, 1, 0, 9, 1, 4,	
5, 7, 4, 5, 3, 1, 5, 2, 7, 9, 7, 8, 1, 2, 7, 0, 5,	0, 6, 1, 6, 1, 7, 6, 1, 9, 6,	0, 6, 1, 6, 1, 7, 6, 1, 9, 6,	
4, 9, 5, 8, 3, 9, 3, 9, 5, 9, 9, 6, 6, 8, 9, 6, 8,	5, 5, 9, 4, 7, 8, 8, 5, 4, 9,	5, 5, 9, 4, 7, 8, 8, 5, 4, 9,	
5, 5, 4, 1, 1, 6, 4, 5, 9, 7, 5, 5, 0, 7, 7, 8, 3,	2, 7, 1, 1, 6, 9, 6, 9, 8, 7,	2, 7, 1, 1, 6, 9, 6, 9, 8, 7,	
0, 1, 1, 9, 8, 5, 0, 7, 1, 2, 5, 8, 2, 2, 4, 8, 5,	8, 8, 0, 3, 0, 8, 6, 0, 3, 3,	8, 8, 0, 3, 0, 8, 6, 0, 3, 3,	
6, 5, 1, 5, 8, 6, 3, 9, 2, 7, 0, 3, 5, 3, 2, 1, 0,	5, 1, 9, 4, 5, 2, 8, 6, 3, 0,	5, 1, 9, 4, 5, 2, 8, 6, 3, 0,	
8, 4, 0, 8, 8, 0, 7, 5, 6, 3, 7, 4, 5, 2, 7, 6, 9,	3, 9, 5, 2, 4, 2, 4, 1, 4, 1,	3, 9, 5, 2, 4, 2, 4, 1, 4, 1,	
4, 5, 0, 2, 6, 9, 3, 2, 5, 6, 7, 5, 4, 9, 5, 4, 9,	3, 7, 4, 0, 0, 1, 2, 8, 4, 8,	3, 7, 4, 0, 0, 1, 2, 8, 4, 8,	
9, 4, 8, 0, 8, 6, 0, 5, 4, 1, 7, 2, 7, 4, 1, 6, 8,	1, 1, 6, 3, 8, 9, 7, 7, 5, 8,	1, 1, 6, 3, 8, 9, 7, 7, 5, 8,	
9, 1, 7, 7, 0, 5, 3, 3, 5, 4, 1, 0, 5, 2, 3, 3, 2,	1, 8, 3, 4, 9, 5, 5, 1, 3, 4,	1, 8, 3, 4, 9, 5, 5, 1, 3, 4,	
3, 8, 3, 9, 1, 6, 8, 3, 4, 8, 0, 3, 3, 9, 1, 4, 5,	9, 2, 3, 8, 9, 1, 9, 7, 5, 7,	9, 2, 3, 8, 9, 1, 9, 7, 5, 7,	
0, 7, 8, 7, 4, 3, 0, 4, 2, 3, 1, 5, 0, 1, 8, 5, 0,	0, 0, 4, 9, 8, 9, 4, 3, 2, 4,	0, 0, 4, 9, 8, 9, 4, 3, 2, 4,	
5, 3, 6, 9, 2, 7, 6, 7, 2, 5, 5, 5, 8, 8, 4, 2, 2,	9, 3, 4, 5, 6, 8, 6, 7, 9, 0,	9, 3, 4, 5, 6, 8, 6, 7, 9, 0,	
0, 8, 1, 7, 3, 9, 9, 3, 0, 3, 4, 5, 2, 4, 5, 9, 2,	4, 5, 6, 2, 4, 8, 4, 5, 2, 5,	4, 5, 6, 2, 4, 8, 4, 5, 2, 5,	
0, 0, 0, 9, 7, 5, 7, 1, 7, 6, 4, 2, 3, 3, 5, 9, 6,	7, 4, 5, 3, 1, 5, 2, 7, 9, 7,	7, 4, 5, 3, 1, 5, 2, 7, 9, 7,	
6, 1, 3, 9, 0, 5, 3, 5, 6, 6, 7, 0, 6, 4, 1, 1, 5,	8, 1, 2, 7, 0, 5, 4, 9, 5, 8,	8, 1, 2, 7, 0, 5, 4, 9, 5, 8,	
8, 4, 8, 0, 5, 9, 9, 6, 7, 7, 9, 5, 8, 8, 2, 5, 7,	3, 9, 3, 9, 5, 9, 9, 6, 6, 8,	3, 9, 3, 9, 5, 9, 9, 6, 6, 8,	
9, 4, 1, 9, 2, 2, 5, 4, 0, 3, 3, 2, 4, 9, 2, 0, 2,	9, 6, 8, 5, 5, 4, 1, 1, 6, 4,	9, 6, 8, 5, 5, 4, 1, 1, 6, 4,	

Test	Expected	Got
0, 0, 5, 9, 9, 3, 9, 3, 3, 4, 9, 8, 3, 6, 4, 3, 8,	5, 9, 7, 5, 5, 0, 7, 7, 8, 3,	5, 9, 7, 5, 5, 0, 7, 7, 8, 3,
8, 1, 4, 2, 9, 1, 2, 5, 6, 3, 4, 1, 5, 9, 0, 1, 7,	0, 1, 1, 9, 8, 5, 0, 7, 1, 2,	0, 1, 1, 9, 8, 5, 0, 7, 1, 2,
2, 5, 5, 6, 1, 7, 1, 0, 7, 4, 0, 5, 1, 3, 9, 7, 7,	5, 8, 2, 2, 4, 8, 5, 6, 5, 1,	5, 8, 2, 2, 4, 8, 5, 6, 5, 1,
4, 4, 5, 6, 0, 0, 6, 2, 2, 4, 8, 2, 5, 6, 5, 6, 0,	5, 8, 6, 3, 9, 2, 7, 0, 3, 5,	5, 8, 6, 3, 9, 2, 7, 0, 3, 5,
2, 1, 7, 8, 7, 7, 0, 2, 8, 4, 2, 2, 7, 6, 8, 5, 0,	3, 2, 1, 0, 8, 4, 0, 8, 8, 0,	3, 2, 1, 0, 8, 4, 0, 8, 8, 0,
9, 5, 0, 0, 0, 9, 9, 5, 3, 7, 2, 0, 8, 9, 4, 5, 0,	7, 5, 6, 3, 7, 4, 5, 2, 7, 6,	7, 5, 6, 3, 7, 4, 5, 2, 7, 6,
5, 9, 2, 6, 2, 5, 3, 3, 5, 2, 2, 8, 3, 0, 3, 9, 7,	9, 4, 5, 0, 2, 6, 9, 3, 2, 5,	9, 4, 5, 0, 2, 6, 9, 3, 2, 5,
8, 3, 2, 8, 6, 9, 6, 6, 6, 5, 1, 7, 3, 3, 7, 1, 9,	6, 7, 5, 4, 9, 5, 4, 9, 9, 4,	6, 7, 5, 4, 9, 5, 4, 9, 9, 4,
3, 5, 1, 4, 3, 4, 2, 0, 2, 0, 1, 0, 2, 1, 6, 3, 2,	8, 0, 8, 6, 0, 5, 4, 1, 7, 2,	8, 0, 8, 6, 0, 5, 4, 1, 7, 2,
9, 8, 3, 2, 1, 7, 1, 8, 0, 7, 2, 4, 6, 4, 1, 6, 5,	7, 4, 1, 6, 8, 9, 1, 7, 7, 0,	7, 4, 1, 6, 8, 9, 1, 7, 7, 0,
6, 8, 5, 4, 5, 5, 4, 0, 6, 8, 5, 1, 2, 5, 0, 5, 9,	5, 3, 3, 5, 4, 1, 0, 5, 2, 3,	5, 3, 3, 5, 4, 1, 0, 5, 2, 3,
3, 8, 1, 7, 8, 5, 6, 9, 5, 6, 1, 1, 0, 6, 1, 8, 0,	3, 2, 3, 8, 3, 9, 1, 6, 8, 3,	3, 2, 3, 8, 3, 9, 1, 6, 8, 3,
4, 7, 5, 4, 9, 7, 5, 1, 7, 7, 2, 7, 8, 4, 6, 0, 2,	4, 8, 0, 3, 3, 9, 1, 4, 5, 0,	4, 8, 0, 3, 3, 9, 1, 4, 5, 0,
6, 4, 9, 5, 0, 1, 1, 2, 0, 2, 8, 4, 7, 2, 9, 2, 3,	7, 8, 7, 4, 3, 0, 4, 2, 3, 1,	7, 8, 7, 4, 3, 0, 4, 2, 3, 1,
3, 2, 2, 3, 2, 0, 0, 1, 8, 6, 4, 0, 1, 3, 7, 8, 4,	5, 0, 1, 8, 5, 0, 5, 3, 6, 9,	5, 0, 1, 8, 5, 0, 5, 3, 6, 9,
6, 7, 2, 0, 3, 5, 3, 1, 8, 8, 9, 3, 2, 8, 8, 3, 7,	2, 7, 6, 7, 2, 5, 5, 5, 8, 8,	2, 7, 6, 7, 2, 5, 5, 5, 8, 8,
5, 2, 9, 3, 7, 5, 4, 7, 4, 9, 2, 6, 9, 9, 2, 8, 3,	4, 2, 2, 0, 8, 1, 7, 3, 9, 9,	4, 2, 2, 0, 8, 1, 7, 3, 9, 9,
6, 7, 9, 6, 9, 6, 6, 1, 5, 0, 7, 5, 6, 7, 2, 2, 7,	3, 0, 3, 4, 5, 2, 4, 5, 9, 2,	3, 0, 3, 4, 5, 2, 4, 5, 9, 2,
3, 7, 5, 4, 1, 5, 9, 3, 6, 5, 9, 3, 9, 4, 0, 9, 2,	0, 0, 0, 9, 7, 5, 7, 1, 7, 6,	0, 0, 0, 9, 7, 5, 7, 1, 7, 6,
0, 9, 0, 4, 9, 2, 3, 0, 9, 1, 7, 1, 7, 6, 2, 2, 7,	4, 2, 3, 3, 5, 9, 6, 6, 1, 3,	4, 2, 3, 3, 5, 9, 6, 6, 1, 3,
3, 0, 7, 8, 6, 0, 7, 8, 8, 6, 3, 1, 9, 6, 3, 2, 2,	9, 0, 5, 3, 5, 6, 6, 7, 0, 6,	9, 0, 5, 3, 5, 6, 6, 7, 0, 6,
1, 4, 1, 9, 6, 6, 6, 7, 7, 2, 1, 8, 8, 6, 8, 3, 5,	4, 1, 1, 5, 8, 4, 8, 0, 5, 9,	4, 1, 1, 5, 8, 4, 8, 0, 5, 9,
6, 3, 2, 1, 3, 8, 0, 4, 2, 0, 6, 5, 1, 6, 9, 5, 2,	9, 6, 7, 7, 9, 5, 8, 8, 2, 5,	9, 6, 7, 7, 9, 5, 8, 8, 2, 5,
1, 7, 4, 1, 0, 0, 7, 0, 0, 7, 3, 8, 7, 9, 9, 3, 0,	7, 9, 4, 1, 9, 2, 2, 5, 4, 0,	7, 9, 4, 1, 9, 2, 2, 5, 4, 0,
3, 2, 3, 3, 5, 8, 5, 1, 9, 9, 6, 4, 0, 0, 0, 8, 1,	3, 3, 2, 4, 9, 2, 0, 2, 0, 0,	3, 3, 2, 4, 9, 2, 0, 2, 0, 0,
4, 9, 6, 2, 0, 5, 9, 5, 8, 0, 3, 9, 2, 2, 4, 3, 4,	5, 9, 9, 3, 9, 3, 3, 4, 9, 8,	5, 9, 9, 3, 9, 3, 3, 4, 9, 8,
9, 5, 2, 6, 0, 4, 5, 4, 0, 5, 5, 4, 6, 6, 3, 8, 2,	3, 6, 4, 3, 8, 8, 1, 4, 2, 9,	3, 6, 4, 3, 8, 8, 1, 4, 2, 9,
7, 8, 0, 2, 5, 4, 5, 6, 3, 3, 6, 8, 1, 0, 6, 1, 5,	1, 2, 5, 6, 3, 4, 1, 5, 9, 0,	1, 2, 5, 6, 3, 4, 1, 5, 9, 0,
7, 2, 9, 3, 1, 8, 3, 0, 8, 8, 3, 2, 1, 7, 5, 5, 6,	1, 7, 2, 5, 5, 6, 1, 7, 1, 0,	1, 7, 2, 5, 5, 6, 1, 7, 1, 0,
0, 6, 8, 2, 6, 9, 7, 5, 1, 1, 6, 0, 6, 2, 1, 4, 5,	7, 4, 0, 5, 1, 3, 9, 7, 7, 4,	7, 4, 0, 5, 1, 3, 9, 7, 7, 4,
8, 7, 4, 3, 4, 6, 7, 9, 9, 8, 2, 5, 9, 6, 5, 0, 3,	4, 5, 6, 0, 0, 6, 2, 2, 4, 8,	4, 5, 6, 0, 0, 6, 2, 2, 4, 8,
2, 5, 7, 7, 4, 0, 8, 3, 4, 3, 2, 3, 0, 5, 6, 0, 2,	2, 5, 6, 5, 6, 0, 2, 1, 7, 8,	2, 5, 6, 5, 6, 0, 2, 1, 7, 8,
5, 7, 0, 4, 2, 3, 0, 9, 1, 9, 3, 7, 8, 4, 7, 0, 9,	7, 7, 0, 2, 8, 4, 2, 2, 7, 6, 8, 5, 0, 9, 5, 0, 0, 0, 9, 9,	7, 7, 0, 2, 8, 4, 2, 2, 7, 6,
8, 7, 3, 7, 5, 1, 7, 7, 4, 4, 1, 7, 8, 4, 0, 6, 4, 9, 5, 4, 5, 3, 7, 3, 3, 7, 2, 1, 6, 3, 4, 6, 3, 1,		8, 5, 0, 9, 5, 0, 0, 0, 9, 9,
	5, 3, 7, 2, 0, 8, 9, 4, 5, 0,	5, 3, 7, 2, 0, 8, 9, 4, 5, 0,
5, 9, 7, 3, 6, 2, 0, 9, 7, 0, 0, 3, 1, 5, 6, 3, 8,	5, 9, 2, 6, 2, 5, 3, 3, 5, 2,	5, 9, 2, 6, 2, 5, 3, 3, 5, 2,

Test	Expected	Got
2, 1, 6, 3, 4, 8, 9, 2, 3, 5, 9, 1, 4, 6, 9, 5, 8,	2, 8, 3, 0, 3, 9, 7, 8, 3, 2,	2, 8, 3, 0, 3, 9, 7, 8, 3, 2,
6, 6, 3, 4, 7, 2, 3, 7, 0, 2, 2, 7, 6, 8, 9, 9, 7,	8, 6, 9, 6, 6, 6, 5, 1, 7, 3,	8, 6, 9, 6, 6, 6, 5, 1, 7, 3,
2, 0, 9, 0, 3, 9, 6, 5, 9, 4, 3, 6, 8, 4, 3, 1, 0,	3, 7, 1, 9, 3, 5, 1, 4, 3, 4,	3, 7, 1, 9, 3, 5, 1, 4, 3, 4,
7, 2, 7, 3, 9, 3, 2, 0, 1, 9, 2, 3, 9, 1, 3, 3, 6,	2, 0, 2, 0, 1, 0, 2, 1, 6, 3,	2, 0, 2, 0, 1, 0, 2, 1, 6, 3,
5, 6, 5, 5, 5, 9, 1, 4, 6, 5, 4, 3, 2, 8, 7, 0, 1,	2, 9, 8, 3, 2, 1, 7, 1, 8, 0,	2, 9, 8, 3, 2, 1, 7, 1, 8, 0,
4, 4, 8, 9, 7, 4, 1, 1, 9, 4, 1, 0, 9, 5, 8, 6, 6,	7, 2, 4, 6, 4, 1, 6, 5, 6, 8,	7, 2, 4, 6, 4, 1, 6, 5, 6, 8,
9, 1, 5, 6, 0,snip 9, 5, 6, 1, 4, 6, 9, 4,	5, 4, 5, 5, 4, 0, 6, 8, 5, 1,	5, 4, 5, 5, 4, 0, 6, 8, 5, 1,
3, 9, 1, 1, 9, 6, 7, 6, 3, 5, 9, 1, 7, 4, 9, 6, 9,	2, 5, 0, 5, 9, 3, 8, 1, 7, 8,	2, 5, 0, 5, 9, 3, 8, 1, 7, 8,
4, 1, 6, 9, 3, 3, 6, 1, 2, 4, 0, 2, 5, 7, 3, 0, 3,	5, 6, 9, 5, 6, 1, 1, 0, 6, 1,	5, 6, 9, 5, 6, 1, 1, 0, 6, 1,
5, 8, 8, 4, 6, 4, 2, 8, 0, 5, 9, 1, 2, 2, 8, 0, 3,	8, 0, 4, 7, 5, 4, 9, 7, 5, 1,	8, 0, 4, 7, 5, 4, 9, 7, 5, 1,
0, 7, 8, 1, 8, 3, 5, 2, 1, 5, 0, 4, 0, 1, 5, 7, 4,	7, 7, 2, 7, 8, 4, 6, 0, 2, 6,	7, 7, 2, 7, 8, 4, 6, 0, 2, 6,
7, 0, 7, 2, 9, 9, 4, 7, 9, 1, 7, 2, 9, 3, 7, 6, 0,	4, 9, 5, 0, 1, 1, 2, 0, 2, 8,	4, 9, 5, 0, 1, 1, 2, 0, 2, 8,
5, 2, 5, 0, 3, 4, 0, 7, 0, 0, 8, 6, 3, 3, 0, 9, 6,	4, 7, 2, 9, 2, 3, 3, 2, 2, 3,	4, 7, 2, 9, 2, 3, 3, 2, 2, 3,
7, 2, 3, 5, 9, 7, 2, 4, 3, 4, 1, 2, 1, 4, 7, 7, 9,	2, 0, 0, 1, 8, 6, 4, 0, 1, 3,	2, 0, 0, 1, 8, 6, 4, 0, 1, 3,
1, 1, 3, 0, 5, 5, 1, 4, 5, 4, 5, 1, 8, 0, 2, 7, 4,	7, 8, 4, 6, 7, 2, 0, 3, 5, 3,	7, 8, 4, 6, 7, 2, 0, 3, 5, 3,
2, 4, 2, 9, 6, 6, 4, 6, 7, 9, 5, 6, 8, 4, 8, 9, 0,	1, 8, 8, 9, 3, 2, 8, 8, 3, 7,	1, 8, 8, 9, 3, 2, 8, 8, 3, 7,
2, 2, 4, 2, 5, 2, 2, 0, 3, 5, 4, 5, 1, 9, 7, 6, 7,	5, 2, 9, 3, 7, 5, 4, 7, 4, 9,	5, 2, 9, 3, 7, 5, 4, 7, 4, 9,
5, 0, 4, 2, 7, 5, 2, 3, 0, 4, 1, 6, 4, 3, 8, 2, 2,	2, 6, 9, 9, 2, 8, 3, 6, 7, 9,	2, 6, 9, 9, 2, 8, 3, 6, 7, 9,
0, 9, 6, 7, 1, 1, 0, 8, 5, 5, 0, 6, 3, 7, 0, 0, 2,	6, 9, 6, 6, 1, 5, 0, 7, 5, 6,	6, 9, 6, 6, 1, 5, 0, 7, 5, 6,
3, 5, 8, 9, 9, 6, 8, 7, 5, 1, 2, 5, 0, 5, 8, 8, 1,	7, 2, 2, 7, 3, 7, 5, 4, 1, 5,	7, 2, 2, 7, 3, 7, 5, 4, 1, 5,
8, 6, 0, 0, 4, 0, 1, 3, 0, 2, 9, 1, 4, 9, 7, 2, 4,	9, 3, 6, 5, 9, 3, 9, 4, 0, 9,	9, 3, 6, 5, 9, 3, 9, 4, 0, 9,
8, 5, 0, 5, 4, 9, 4, 1, 6, 8, 9, 0, 8, 0, 0, 1, 7,	2, 0, 9, 0, 4, 9, 2, 3, 0, 9,	2, 0, 9, 0, 4, 9, 2, 3, 0, 9,
0, 4, 7, 2, 4, 2, 6, 5, 3, 1, 4, 3, 8, 8, 9, 7, 7,	1, 7, 1, 7, 6, 2, 2, 7, 3, 0,	1, 7, 1, 7, 6, 2, 2, 7, 3, 0,
6, 9, 5, 0, 7, 2, 4, 6, 4, 6, 0, 8, 9, 1, 2, 7, 6,	7, 8, 6, 0, 7, 8, 8, 6, 3, 1,	7, 8, 6, 0, 7, 8, 8, 6, 3, 1,
8, 1, 3, 2, 4, 1, 9, 3, 8, 4, 2, 6, 2, 5, 7, 8, 2,	9, 6, 3, 2, 2, 1, 4, 1, 9, 6,	9, 6, 3, 2, 2, 1, 4, 1, 9, 6,
7, 5, 7, 2, 2, 5, 6, 6, 3, 0, 6, 8, 3, 6, 8, 6, 1,	6, 6, 7, 7, 2, 1, 8, 8, 6, 8,	6, 6, 7, 7, 2, 1, 8, 8, 6, 8,
8, 0, 2, 8, 4, 4, 9, 1, 9, 3, 4, 6, 0, 3, 3, 0, 6,	3, 5, 6, 3, 2, 1, 3, 8, 0, 4,	3, 5, 6, 3, 2, 1, 3, 8, 0, 4,
7, 1, 4, 6, 4, 2, 3, 5, 5, 2, 6, 5, 9, 5, 0, 5, 6,	2, 0, 6, 5, 1, 6, 9, 5, 2, 1,	2, 0, 6, 5, 1, 6, 9, 5, 2, 1,
3, 2, 8, 1, 9, 7, 7, 4, 0, 7, 2, 4, 5, 5, 6, 2, 3,	7, 4, 1, 0, 0, 7, 0, 0, 7, 3,	7, 4, 1, 0, 0, 7, 0, 0, 7, 3,
9, 9, 7, 8, 7, 2, 1, 3, 6, 4, 3, 2, 7, 3, 7, 6, 2,	8, 7, 9, 9, 3, 0, 3, 2, 3, 3,	8, 7, 9, 9, 3, 0, 3, 2, 3, 3,
5, 1, 7, 4, 7, 2, 3, 4, 5, 2, 2, 9, 8, 3, 3, 0, 2,	5, 8, 5, 1, 9, 9, 6, 4, 0, 0,	5, 8, 5, 1, 9, 9, 6, 4, 0, 0,
8, 8, 6, 3, 7, 3, 0, 4, 8, 6, 1, 1, 1, 2, 2, 7, 3,	0, 8, 1, 4, 9, 6, 2, 0, 5, 9,	0, 8, 1, 4, 9, 6, 2, 0, 5, 9,
2, 0, 7, 1, 9, 4, 8, 0, 3, 4, 7, 3, 4, 3, 8, 1, 2,	5, 8, 0, 3, 9, 2, 2, 4, 3, 4,	5, 8, 0, 3, 9, 2, 2, 4, 3, 4,
2, 6, 3, 2, 8, 1, 1, 7, 6, 5, 3, 5, 7, 5, 6, 6, 7,	9, 5, 2, 6, 0, 4, 5, 4, 0, 5,	9, 5, 2, 6, 0, 4, 5, 4, 0, 5,
9, 8, 4, 8, 4, 0, 1, 1, 7, 0, 5, 5, 7, 3, 0, 9, 3,	5, 4, 6, 6, 3, 8, 2, 7, 8, 0,	5, 4, 6, 6, 3, 8, 2, 7, 8, 0,
3, 5, 9, 7, 1, 1, 3, 9, 6, 7, 8, 4, 7, 4, 5, 5, 8,	2, 5, 4, 5, 6, 3, 3, 6, 8, 1,	2, 5, 4, 5, 6, 3, 3, 6, 8, 1,

Test	Expected	Got
0, 6, 2, 7, 4, 6, 0, 3, 0, 4, 6, 5, 8, 0, 3, 4, 7,	0, 6, 1, 5, 7, 2, 9, 3, 1, 8,	0, 6, 1, 5, 7, 2, 9, 3, 1, 8,
9, 3, 8, 5, 2, 1, 6, 0, 9, 0, 4, 7, 9, 2, 0, 7, 2,	3, 0, 8, 8, 3, 2, 1, 7, 5, 5,	3, 0, 8, 8, 3, 2, 1, 7, 5, 5,
5, 6, 4, 9, 4, 1, 0, 8, 5, 6, 2, 0, 8, 0, 1, 4, 9,	6, 0, 6, 8, 2, 6, 9, 7, 5, 1,	6, 0, 6, 8, 2, 6, 9, 7, 5, 1,
0, 2, 3, 8, 3, 2, 4, 3, 0, 1, 0, 5, 3, 3, 2, 2, 8,	1, 6, 0, 6, 2, 1, 4, 5, 8, 7,	1, 6, 0, 6, 2, 1, 4, 5, 8, 7,
6, 0, 1, 1, 3, 1, 6, 1, 0, 3, 0, 6, 3, 8, 1, 0, 1,	4, 3, 4, 6, 7, 9, 9, 8, 2, 5,	4, 3, 4, 6, 7, 9, 9, 8, 2, 5,
0, 2, 2, 7, 1, 1, 1, 4, 6, 2, 2, 0, 8, 6, 6, 5, 9,	9, 6, 5, 0, 3, 2, 5, 7, 7, 4,	9, 6, 5, 0, 3, 2, 5, 7, 7, 4,
1, 0, 3, 1, 8, 2, 9, 2, 0, 8, 5, 2, 2, 6, 1, 1, 5,	0, 8, 3, 4, 3, 2, 3, 0, 5, 6,	0, 8, 3, 4, 3, 2, 3, 0, 5, 6,
3, 1, 0, 3, 3, 1, 8, 7, 8, 4, 1, 0, 1, 4, 2, 6, 5,	0, 2, 5, 7, 0, 4, 2, 3, 0, 9,	0, 2, 5, 7, 0, 4, 2, 3, 0, 9,
6, 9, 1, 8, 2, 1, 8, 6, 0, 0, 2, 5, 6, 6, 6, 5, 6,	1, 9, 3, 7, 8, 4, 7, 0, 9, 8,	1, 9, 3, 7, 8, 4, 7, 0, 9, 8,
0, 2, 3, 2, 0, 4, 5, 3, 8, 5, 2, 1, 1, 1, 7, 1, 3,	7, 3, 7, 5, 1, 7, 7, 4, 4, 1,	7, 3, 7, 5, 1, 7, 7, 4, 4, 1,
6, 7, 6, 0, 9, 3, 5, 3, 6, 5, 4, 8, 9, 9, 0, 9, 6,	7, 8, 4, 0, 6, 4, 9, 5, 4, 5,	7, 8, 4, 0, 6, 4, 9, 5, 4, 5,
8, 9, 6, 2, 6, 2, 3, 5, 0, 7, 3, 5, 1, 8, 6, 9, 4,	3, 7, 3, 3, 7, 2, 1, 6, 3, 4,	3, 7, 3, 3, 7, 2, 1, 6, 3, 4,
5, 9, 6, 8, 6, 1, 2, 0, 6, 5, 1, 0, 8, 5, 5, 6, 6,	6, 3, 1, 5, 9, 7, 3, 6, 2, 0,	6, 3, 1, 5, 9, 7, 3, 6, 2, 0,
8, 5, 0, 4, 5, 4, 0, 5, 6, 4, 0, 5, 5, 0, 1, 1, 6,	9, 7, 0, 0, 3, 1, 5, 6, 3, 8,	9, 7, 0, 0, 3, 1, 5, 6, 3, 8,
2, 9, 6, 1, 4, 0, 9, 8, 6, 7, 3, 0, 3, 7, 2, 8, 5,	2, 1, 6, 3, 4, 8, 9, 2, 3, 5,	2, 1, 6, 3, 4, 8, 9, 2, 3, 5,
6, 0, 8, 4, 2, 9, 9, 4, 8, 7, 8, 4, 7, 1, 3, 7, 0,	9, 1, 4, 6, 9, 5, 8, 6, 6, 3,	9, 1, 4, 6, 9, 5, 8, 6, 6, 3,
8, 3, 9, 3, 1, 0, 8, 7, 8, 4, 5, 2, 7, 4, 9, 9, 6,	4, 7, 2, 3, 7, 0, 2, 2, 7, 6,	4, 7, 2, 3, 7, 0, 2, 2, 7, 6,
0, 0, 9, 2, 3, 2, 2, 3, 3, 5, 7, 6, 8, 7, 6, 0, 1,	8, 9, 9, 7, 2, 0, 9, 0, 3, 9,	8, 9, 9, 7, 2, 0, 9, 0, 3, 9,
3, 6, 1, 3, 6, 5, 1, 7, 1, 7, 6, 3, 6, 8, 0, 5, 4,	6, 5, 9, 4, 3, 6, 8, 4, 3, 1,	6, 5, 9, 4, 3, 6, 8, 4, 3, 1,
2, 2, 2, 8, 3, 9, 8, 7, 8, 5, 2, 6, 5, 3, 2, 1, 0,	0, 7, 2, 7, 3, 9, 3, 2, 0, 1,	0, 7, 2, 7, 3, 9, 3, 2, 0, 1,
8, 7, 4, 4, 8, 9, 7, 9, 4, 1, 4, 6, 5, 3, 2, 8, 6,	9, 2, 3, 9, 1, 3, 3, 6, 5, 6,	9, 2, 3, 9, 1, 3, 3, 6, 5, 6,
8, 8, 2, 0, 1, 5, 3, 8, 5, 9, 8, 0, 3, 5, 8, 4, 6,	5, 5, 5, 9, 1, 4, 6, 5, 4, 3,	5, 5, 5, 9, 1, 4, 6, 5, 4, 3,
5, 0, 4, 0, 6, 6, 0, 1, 5, 0, 2, 4, 6, 8, 9, 7, 9,	2, 8, 7, 0, 1, 4, 4, 8, 9, 7,	2, 8, 7, 0, 1, 4, 4, 8, 9, 7,
4, 3, 9, 3, 6, 9, 3, 7, 2, 3, 2, 5, 8, 8, 0, 5, 2,	4, 1, 1, 9, 4, 1, 0, 9, 5, 8,	4, 1, 1, 9, 4, 1, 0, 9, 5, 8,
4, 2, 9, 2, 6, 4, 4, 1, 2, 1, 6, 7, 3, 7, 1, 7, 8,	6, 6, 9, 1, 5, 6, 0, 8, 0, 3,	6, 6, 9, 1, 5, 6, 0, 8, 0, 3,
9, 7, 6, 2, 8, 7, 8, 3, 2, 6, 3, 7, 0, 2, 5, 5, 1,	3,snip 3, 0, 7, 6, 6,	3,snip 3, 0, 7, 6, 6,
4, 1, 6, 2, 9, 5, 9, 4, 3, 2, 8, 7, 4, 8, 5, 1, 2,	4, 1, 7, 5, 1, 2, 9, 2, 6, 3,	4, 1, 7, 5, 1, 2, 9, 2, 6, 3,
9, 5, 0, 7, 3, 1, 7, 0, 8, 3, 6, 5, 8, 5, 2, 7, 5,	8, 7, 6, 7, 2, 9, 1, 3, 0, 2,	8, 7, 6, 7, 2, 9, 1, 3, 0, 2,
0, 3, 0, 7, 3, 0, 6, 1, 5, 5, 5, 1, 5, 8, 2, 3, 2,	5, 8, 1, 1, 8, 9, 9, 7, 5, 9,	5, 8, 1, 1, 8, 9, 9, 7, 5, 9,
3, 6, 0, 1, 5, 1, 2, 2, 3, 6, 0, 4, 1, 9, 1, 4, 1,	9, 4, 7, 5, 1, 5, 2, 0, 0, 5,	9, 4, 7, 5, 1, 5, 2, 0, 0, 5,
7, 6, 4, 6, 6, 5, 7, 5, 4, 1, 1, 0, 4, 7, 6, 1, 6,	9, 8, 0, 4, 1, 1, 1, 6, 7, 5,	9, 8, 0, 4, 1, 1, 1, 6, 7, 5,
8, 9, 6, 3, 2, 1, 5, 1, 0, 2, 8, 6, 6, 6, 2, 3, 5,	6, 3, 4, 0, 5, 9, 8, 4, 0, 9,	6, 3, 4, 0, 5, 9, 8, 4, 0, 9,
2, 6, 7, 1, 9, 9, 2, 2, 6, 5, 8, 0, 4, 3, 1, 9, 6,	8, 8, 8, 2, 3, 7, 5, 5, 5, 5,	8, 8, 8, 2, 3, 7, 5, 5, 5, 5,
8, 7, 4, 0, 3, 3, 7, 1, 3, 0, 2, 9, 1, 5, 7, 7, 6,	7, 2, 6, 1, 0, 2, 3, 1, 1, 9,	7, 2, 6, 1, 0, 2, 3, 1, 1, 9,
7, 8, 4, 5, 7, 5, 5, 5, 4, 9, 7, 2, 6, 6, 5, 3, 2,	5, 1, 4, 5, 9, 1, 9, 6, 5, 1,	5, 1, 4, 5, 9, 1, 9, 6, 5, 1,
1, 1, 9, 8, 9, 1, 6, 7, 8, 4, 6, 1, 7, 5, 1, 9, 3,	7, 4, 1, 3, 0, 7, 6, 6, 3, 8,	7, 4, 1, 3, 0, 7, 6, 6, 3, 8,

Test	Expected	Got
0, 5, 1, 1, 4, 2, 5, 1, 5, 2, 7, 4, 7, 9, 8, 9, 2,	8, 9, 3, 8, 6, 5, 4, 1, 7, 3,	8, 9, 3, 8, 6, 5, 4, 1, 7, 3,
0, 2, 9, 9, 6, 8, 4, 0, 9, 5, 6, 0, 8, 7, 1, 3, 1,	5, 8, 0, 9, 8, 5, 3, 2, 6, 4,	5, 8, 0, 9, 8, 5, 3, 2, 6, 4,
3, 1, 7, 3, 5, 2, 7, 2, 4, 2, 4, 4, 3, 7, 0, 8, 2,	4, 1, 6, 3, 1, 5, 9, 9, 7, 9,	4, 1, 6, 3, 1, 5, 9, 9, 7, 9,
1, 2, 0, 5, 6, 3, 6, 9, 6, 4, 7, 1, 7, 2, 1, 7, 6,	4, 4, 2, 8, 3, 6, 0, 9, 8, 5,	4, 4, 2, 8, 3, 6, 0, 9, 8, 5,
7, 0, 1, 6, 8, 6, 5, 1, 6, 0, 8, 5, 7, 4, 9, 5, 9,	1, 2, 3, 3, 7, 5, 7, 0, 1, 2,	1, 2, 3, 3, 7, 5, 7, 0, 1, 2,
2, 6, 4, 9, 3, 4, 4, 6, 7, 6, 6, 6, 5, 0, 4, 9, 4,	8, 3, 4, 4, 9, 3, 0, 2, 7, 3,	8, 3, 4, 4, 9, 3, 0, 2, 7, 3,
3, 9, 2, 6, 3, 0, 7, 6, 5, 6, 8, 8, 7, 6, 4, 5, 1,	2, 6, 4, 5, 3, 4, 9, 7, 1, 5,	2, 6, 4, 5, 3, 4, 9, 7, 1, 5,
8, 1, 4, 4, 3, 5, 6, 2, 2, 8, 8, 8, 0, 5, 8, 9, 0,	8, 7, 9, 9, 1, 7, 3, 1, 3, 5,	8, 7, 9, 9, 1, 7, 3, 1, 3, 5,
9, 0, 7, 0, 2, 6, 2, 3, 8, 1, 6, 5};	4, 4, 5, 4, 4, 8, 2, 1, 0, 5,	4, 4, 5, 4, 4, 8, 2, 1, 0, 5,
int k = 11111;	2, 3, 8, 2, 9, 2, 4, 3, 3, 7,	2, 3, 8, 2, 9, 2, 4, 3, 3, 7,
LLNode* head = LLNode::createWithIterators(arr, arr	8, 1, 5, 5, 0, 4, 5, 2, 7, 7,	8, 1, 5, 5, 0, 4, 5, 2, 7, 7,
+ sizeof(arr) / sizeof(int));	0, 8, 0, 4, 1, 9, 2, 0, 1, 6,	0, 8, 0, 4, 1, 9, 2, 0, 1, 6,
LLNode::printList(head);	3, 9, 8, 3, 8, 3, 7, 1, 2, 5,	3, 9, 8, 3, 8, 3, 7, 1, 2, 5,
cout << "\n";	9, 1, 2, 9, 7, 4, 2, 4, 5, 5,	9, 1, 2, 9, 7, 4, 2, 4, 5, 5,
LLNode* newhead = rotateLinkedList(head, k);	7, 9, 6, 9, 0, 6, 8, 0, 5, 3,	7, 9, 6, 9, 0, 6, 8, 0, 5, 3,
LLNode::printList(newhead);	9, 1, 9, 9, 5, 6, 1, 0, 6, 2,	9, 1, 9, 9, 5, 6, 1, 0, 6, 2,
	0, 8, 1, 1, 2, 3, 5, 6, 8, 6,	0, 8, 1, 1, 2, 3, 5, 6, 8, 6,
	6, 4, 8, 7, 5, 4, 2, 7, 6, 8,	6, 4, 8, 7, 5, 4, 2, 7, 6, 8,
	0, 9, 2, 9, 5, 3, 3, 0, 6, 4,	0, 9, 2, 9, 5, 3, 3, 0, 6, 4,
	8, 8, 1, 6, 0, 5, 8, 6, 6, 1,	8, 8, 1, 6, 0, 5, 8, 6, 6, 1,
	1, 0, 3, 7, 4, 3, 0, 0, 3, 4,	1, 0, 3, 7, 4, 3, 0, 0, 3, 4,
	0, 7, 0, 7, 1, 3, 7, 5, 7, 5,	0, 7, 0, 7, 1, 3, 7, 5, 7, 5,
	8, 9, 3, 5, 8, 8, 8, 4, 5, 1,	8, 9, 3, 5, 8, 8, 8, 4, 5, 1,
	2, 8, 6, 9, 6, 9, 2, 7, 6, 9,	2, 8, 6, 9, 6, 9, 2, 7, 6, 9,
	9, 4, 0, 8, 0, 4, 3, 5, 2, 0,	9, 4, 0, 8, 0, 4, 3, 5, 2, 0,
	3, 2, 6, 5, 8, 5, 2, 9, 8, 6,	3, 2, 6, 5, 8, 5, 2, 9, 8, 6,
	9, 8, 1, 7, 4, 9, 0, 2, 6, 8,	9, 8, 1, 7, 4, 9, 0, 2, 6, 8,
	1, 9, 9, 1, 3, 4, 5, 4, 1, 1,	1, 9, 9, 1, 3, 4, 5, 4, 1, 1,
	7, 5, 2, 0, 4, 3, 5, 3, 1, 4,	7, 5, 2, 0, 4, 3, 5, 3, 1, 4,
	0, 7, 7, 9, 1, 8, 6, 3, 9, 0,	0, 7, 7, 9, 1, 8, 6, 3, 9, 0,
	7, 7, 4, 7, 4, 3, 8, 2, 6, 4,	7, 7, 4, 7, 4, 3, 8, 2, 6, 4,
	0, 5, 8, 8, 7, 2, 7, 3, 2, 3,	0, 5, 8, 8, 7, 2, 7, 3, 2, 3,
	8, 7, 1, 3, 3, 7, 2, 2, 1, 6,	8, 7, 1, 3, 3, 7, 2, 2, 1, 6,
	3, 4, 6, 5, 3, 4, 0, 2, 1, 2,	3, 4, 6, 5, 3, 4, 0, 2, 1, 2,
	5, 1, 2, 6, 9, 6, 8, 0, 9, 7,	5, 1, 2, 6, 9, 6, 8, 0, 9, 7,
	7, 8, 8, 6, 9, 7, 8, 1, 5, 3,	7 0 0 6 0 7 0 1 5 2

Test	Expected	Got
	3, 8, 8, 4, 7, 6, 2, 2, 7, 0,	3, 8, 8, 4, 7, 6, 2, 2, 7, 0,
	6, 8, 1, 5, 2, 5, 6, 2, 1, 2,	6, 8, 1, 5, 2, 5, 6, 2, 1, 2,
	4, 9, 2, 6, 0, 2, 8, 0, 9, 9,	4, 9, 2, 6, 0, 2, 8, 0, 9, 9,
	4, 7, 5, 4, 6, 6, 5, 2, 3, 9,	4, 7, 5, 4, 6, 6, 5, 2, 3, 9,
	2, 7, 0, 6, 7, 1, 5, 4, 9, 8,	2, 7, 0, 6, 7, 1, 5, 4, 9, 8,
	3, 2, 1, 4, 7, 9, 9, 6, 9, 6,	3, 2, 1, 4, 7, 9, 9, 6, 9, 6,
	6, 6, 0, 9, 8, 5, 7, 3, 4, 8,	6, 6, 0, 9, 8, 5, 7, 3, 4, 8,
	0, 4, 1, 1, 0, 9, 8, 4, 1, 7,	0, 4, 1, 1, 0, 9, 8, 4, 1, 7,
	3, 1, 1, 2, 5, 4, 4, 6, 2, 7,	3, 1, 1, 2, 5, 4, 4, 6, 2, 7,
	4, 5, 8, 5, 3, 0, 7, 1, 7, 3,	4, 5, 8, 5, 3, 0, 7, 1, 7, 3,
	8, 5, 1, 1, 7, 2, 2, 4, 3, 4,	8, 5, 1, 1, 7, 2, 2, 4, 3, 4,
	5, 4, 3, 0, 3, 7, 2, 0, 9, 3,	5, 4, 3, 0, 3, 7, 2, 0, 9, 3,
	4, 2, 4, 3, 5, 7, 8, 4, 7, 4,	4, 2, 4, 3, 5, 7, 8, 4, 7, 4,
	9, 5, 6, 4, 5, 0, 5, 2, 9, 6,	9, 5, 6, 4, 5, 0, 5, 2, 9, 6,
	9, 3, 5, 6, 9, 9, 0, 5, 2, 1,	9, 3, 5, 6, 9, 9, 0, 5, 2, 1,
	0, 4, 6, 1, 1, 7, 8, 8, 5, 3,	0, 4, 6, 1, 1, 7, 8, 8, 5, 3,
	5, 8, 1, 1, 2, 6, 8, 1, 8, 2,	5, 8, 1, 1, 2, 6, 8, 1, 8, 2,
	3, 9, 3, 0, 5, 8, 0, 0, 6, 2,	3, 9, 3, 0, 5, 8, 0, 0, 6, 2,
	4, 0, 2, 6, 2, 2, 8, 7, 1, 8,	4, 0, 2, 6, 2, 2, 8, 7, 1, 8,
	6, 8, 2, 7, 9, 3, 6, 3, 5, 7,	6, 8, 2, 7, 9, 3, 6, 3, 5, 7,
	1, 7, 0, 8, 6, 6, 6, 5, 2, 6,	1, 7, 0, 8, 6, 6, 6, 5, 2, 6,
	3, 2, 6, 3, 5, 6, 5, 2, 3, 1,	3, 2, 6, 3, 5, 6, 5, 2, 3, 1,
	7, 0, 2, 3, 2, 3, 3, 0, 6, 1,	7, 0, 2, 3, 2, 3, 3, 0, 6, 1,
	5, 1, 1, 0, 2, 1, 7, 8, 8, 6,	5, 1, 1, 0, 2, 1, 7, 8, 8, 6,
	7, 2, 9, 6, 1, 0, 1, 2, 5, 0,	7, 2, 9, 6, 1, 0, 1, 2, 5, 0,
	0, 6, 5, 7, 7, 4, 6, 4, 7, 4,	0, 6, 5, 7, 7, 4, 6, 4, 7, 4,
	1, 5, 6, 3, 1, 7, 5, 6, 4, 4,	1, 5, 6, 3, 1, 7, 5, 6, 4, 4,
	2, 8, 5, 7, 6, 2, 8, 1, 2, 2,	2, 8, 5, 7, 6, 2, 8, 1, 2, 2,
	0, 8, 9, 3, 5, 6, 4, 3, 4, 0,	0, 8, 9, 3, 5, 6, 4, 3, 4, 0,
	9, 7, 7, 0, 0, 9, 8, 8, 9, 6,	9, 7, 7, 0, 0, 9, 8, 8, 9, 6,
	4, 6, 6, 4, 8, 0, 8, 2, 8, 0,	4, 6, 6, 4, 8, 0, 8, 2, 8, 0,
	0, 4, 1, 3, 0, 2, 9, 7, 3, 3,	
	0, 5, 9, 0, 1, 4, 7, 1, 6, 4,	0, 5, 9, 0, 1, 4, 7, 1, 6, 4,
	4, 1, 4, 8, 9, 7, 5, 9, 1, 9,	4, 1, 4, 8, 9, 7, 5, 9, 1, 9,
	6, 5, 3, 4, 5, 3, 6, 1, 0, 4,	6, 5, 3, 4, 5, 3, 6, 1, 0, 4,
	3, 0, 9, 3, 8, 8, 9, 7, 3, 0,	3, 0, 9, 3, 8, 8, 9, 7, 3, 0,

Test	Expected	Got
	4, 2, 4, 9, 7, 4, 3, 2, 2, 8,	4, 2, 4, 9, 7, 4, 3, 2, 2, 8,
	9, 2, 5, 0, 9, 3, 2, 1, 9, 3,	9, 2, 5, 0, 9, 3, 2, 1, 9, 3,
	2, 3, 2, 8, 0, 2, 5, 1, 6, 8,	2, 3, 2, 8, 0, 2, 5, 1, 6, 8,
	3, 1, 7, 8, 2, 6, 2, 0, 2, 7,	3, 1, 7, 8, 2, 6, 2, 0, 2, 7,
	2, 6, 7, 3, 6, 1, 5, 6, 3, 0,	2, 6, 7, 3, 6, 1, 5, 6, 3, 0,
	4, 6, 4, 4, 2, 4, 1, 6, 0, 5,	4, 6, 4, 4, 2, 4, 1, 6, 0, 5,
	5, 9, 3, 8, 4, 3, 4, 9, 6, 2,	5, 9, 3, 8, 4, 3, 4, 9, 6, 2,
	0, 4, 6, 0, 5, 0, 9, 0, 9, 7,	0, 4, 6, 0, 5, 0, 9, 0, 9, 7,
	6, 8, 7, 0, 7, 3, 6, 1, 8, 4,	6, 8, 7, 0, 7, 3, 6, 1, 8, 4,
	2, 8, 7, 0, 2, 5, 4, 0, 5, 7,	2, 8, 7, 0, 2, 5, 4, 0, 5, 7,
	4, 8, 5, 1, 2, 2, 1, 6, 5, 0,	4, 8, 5, 1, 2, 2, 1, 6, 5, 0,
	9, 4, 6, 2, 7, 7, 4, 2, 9, 7,	9, 4, 6, 2, 7, 7, 4, 2, 9, 7,
	6, 7, 5, 0, 5, 5, 2, 8, 8, 8,	6, 7, 5, 0, 5, 5, 2, 8, 8, 8,
	8, 2, 0, 6, 2, 1, 8, 9, 5, 1,	8, 2, 0, 6, 2, 1, 8, 9, 5, 1,
	2, 8, 1, 5, 5, 7, 2, 8, 6, 1,	2, 8, 1, 5, 5, 7, 2, 8, 6, 1,
	9, 6, 9, 4, 1, 0, 0, 9, 4, 1,	9, 6, 9, 4, 1, 0, 0, 9, 4, 1,
	1, 3, 9, 8, 1, 0, 4, 3, 2, 6,	1, 3, 9, 8, 1, 0, 4, 3, 2, 6,
	5, 9, 8, 3, 7, 9, 4, 0, 6, 8,	5, 9, 8, 3, 7, 9, 4, 0, 6, 8,
	8, 4, 1, 5, 0, 5, 6, 3, 3, 1,	8, 4, 1, 5, 0, 5, 6, 3, 3, 1,
	0, 9, 3, 7, 6, 8, 7, 8, 1, 1,	0, 9, 3, 7, 6, 8, 7, 8, 1, 1,
	0, 3, 1, 8, 9, 7, 9, 1, 8, 5,	0, 3, 1, 8, 9, 7, 9, 1, 8, 5,
	8, 3, 3, 0, 7, 2, 3, 8, 9, 5,	8, 3, 3, 0, 7, 2, 3, 8, 9, 5,
	0, 9, 4, 7, 7, 5, 6, 2, 2, 2,	0, 9, 4, 7, 7, 5, 6, 2, 2, 2,
	6, 5, 3, 1, 9, 5, 1, 4, 7, 7,	6, 5, 3, 1, 9, 5, 1, 4, 7, 7,
	4, 6, 6, 1, 6, 0, 6, 3, 8, 0,	4, 6, 6, 1, 6, 0, 6, 3, 8, 0,
	4, 2, 2, 0, 5, 3, 9, 8, 7, 6,	4, 2, 2, 0, 5, 3, 9, 8, 7, 6,
	3, 5, 1, 9, 4, 5, 0, 7, 9, 1,	3, 5, 1, 9, 4, 5, 0, 7, 9, 1,
	9, 1, 3, 6, 3, 2, 3, 9, 2, 5,	9, 1, 3, 6, 3, 2, 3, 9, 2, 5,
	6, 0, 2, 7, 2, 7, 9, 1, 5, 1,	6, 0, 2, 7, 2, 7, 9, 1, 5, 1,
	4, 3, 9, 8, 6, 2, 1, 9, 0, 2,	4, 3, 9, 8, 6, 2, 1, 9, 0, 2,
	8, 1, 9, 3, 5, 2, 7, 7, 9, 9,	8, 1, 9, 3, 5, 2, 7, 7, 9, 9,
	9, 6, 6, 6, 7, 6, 1, 2, 7, 6,	
	4, 0, 9, 5, 6, 7, 5, 1, 3, 7,	
	7, 8, 1, 6, 8, 4, 5, 4, 7, 2,	7, 8, 1, 6, 8, 4, 5, 4, 7, 2,
	4, 0, 1, 4, 8, 1, 2, 3, 0, 8,	4, 0, 1, 4, 8, 1, 2, 3, 0, 8,
	8, 0, 5, 0, 5, 8, 4, 7, 8, 7,	8, 0, 5, 0, 5, 8, 4, 7, 8, 7,

Test	Expected	Got
	0, 0, 0, 5, 0, 1, 0, 0, 1,	5, 0, 0, 0, 5, 0, 1, 0, 0, 1, 5,
	5, 1, 4, 5, 7, 6, 8, 4, 9,	9, 5, 1, 4, 5, 7, 6, 8, 4, 9, 9,
	6, 5, 6, 5, 2, 9, 2, 7, 6,	3, 6, 5, 6, 5, 2, 9, 2, 7, 6, 3,
	5, 5, 0, 5, 9, 0, 4, 7, 1,	7, 5, 5, 0, 5, 9, 0, 4, 7, 1, 7,
	9, 8, 1, 5, 5, 1, 5, 4, 5,	9, 8, 1, 5, 5, 1, 5, 4, 5, 9,
	6, 6, 8, 8, 7, 0, 7, 2, 4,	4, 6, 6, 8, 8, 7, 0, 7, 2, 4, 4,
	4, 3, 1, 4, 5, 9, 8, 0, 8,	4, 4, 3, 1, 4, 5, 9, 8, 0, 8, 4,
	9, 2, 4, 1, 9, 9, 1, 9, 5,	3, 9, 2, 4, 1, 9, 9, 1, 9, 5, 3,
	3, 1, 9, 2, 6, 0, 3, 3, 3,	0, 3, 1, 9, 2, 6, 0, 3, 3, 3, 0,
	3, 9, 1, 2, 4, 5, 3, 5, 7,	9, 3, 9, 1, 2, 4, 5, 3, 5, 7, 9,
	7, 7, 4, 6, 9, 7, 5, 9, 9,	5, 7, 7, 4, 6, 9, 7, 5, 9, 9, 5,
	2, 5, 9, 7, 0, 4, 3, 1, 4,	3, 2, 5, 9, 7, 0, 4, 3, 1, 4, 3,
	6, 1, 8, 5, 8, 8, 3, 7, 1,	5, 6, 1, 8, 5, 8, 8, 3, 7, 1, 5,
	3, 5, 0, 3, 4, 3, 7, 9, 6,	9, 3, 5, 0, 3, 4, 3, 7, 9, 6, 9,
	6, 9, 6, 6, 4, 7]	6, 9, 6, 6, 4, 7]

	Test	Expected	Got	
,	int arr[] = {4, 3, 0, 1, 8, 3, 3, 8, 6, 8, 6, 6, 4,	[4, 3, 0, 1, 8, 3, 3, 8, 6, 8,	[4, 3, 0, 1, 8, 3, 3, 8, 6, 8,	~
	4, 9, 4, 6, 0, 6, 5, 2, 2, 9, 9, 1, 6, 2, 8, 1, 5,	6, 6, 4, 4, 9, 4, 6, 0, 6, 5,	6, 6, 4, 4, 9, 4, 6, 0, 6, 5,	
	8, 6, 5, 4, 0, 9, 9, 6, 2, 8, 1, 7, 2, 6, 4, 9, 8,	2, 2, 9, 9, 1, 6, 2, 8, 1, 5,	2, 2, 9, 9, 1, 6, 2, 8, 1, 5,	
	1, 7, 6, 6, 2, 4, 5, 5, 0, 6, 8, 9, 3, 6, 2, 7, 3,	8, 6, 5, 4, 0, 9, 9, 6, 2, 8,	8, 6, 5, 4, 0, 9, 9, 6, 2, 8,	
	0, 2, 6, 8, 9, 9, 6, 8, 2, 5, 0, 8, 0, 9, 7, 5, 6,	1, 7, 2, 6, 4, 9, 8, 1, 7, 6,	1, 7, 2, 6, 4, 9, 8, 1, 7, 6,	
	4, 5, 3, 1, 5, 5, 1, 4, 4, 9, 1, 0, 2, 3, 5, 4, 9,	6, 2, 4, 5, 5, 0, 6, 8, 9, 3,	6, 2, 4, 5, 5, 0, 6, 8, 9, 3,	
	3, 2, 2, 3, 9, 7, 8, 6, 7, 7, 4, 4, 8, 0, 6, 6, 2,	6, 2, 7, 3, 0, 2, 6, 8, 9, 9,	6, 2, 7, 3, 0, 2, 6, 8, 9, 9,	
	5, 8, 7, 6, 8, 7, 1, 7, 6, 1, 9, 2, 0, 3, 7, 1, 0,	6, 8, 2, 5, 0, 8, 0, 9, 7, 5,	6, 8, 2, 5, 0, 8, 0, 9, 7, 5,	
	0, 4, 5, 4, 4, 2, 9, 4, 6, 4, 5, 0, 8, 3, 9, 8, 2,	6, 4, 5, 3, 1, 5, 5, 1, 4, 4,	6, 4, 5, 3, 1, 5, 5, 1, 4, 4,	
	4, 9, 2, 4, 2, 6, 5, 2, 3, 5, 3, 8, 7, 6, 1, 2, 7,	9, 1, 0, 2, 3, 5, 4, 9, 3, 2,	9, 1, 0, 2, 3, 5, 4, 9, 3, 2,	
	9, 8, 7, 4, 8, 5, 4, 3, 1, 6, 0, 6, 6, 9, 4, 0, 4,	2, 3, 9, 7, 8, 6, 7, 7, 4, 4,	2, 3, 9, 7, 8, 6, 7, 7, 4, 4,	
	0, 0, 7, 8, 9, 4, 6, 7, 4, 3, 3, 7, 8, 7, 5, 7, 7,	8, 0, 6, 6, 2, 5, 8, 7, 6, 8,	8, 0, 6, 6, 2, 5, 8, 7, 6, 8,	
	9, 6, 1, 9, 4, 4, 1, 0, 9, 1, 2, 4, 8, 3, 1, 1, 7,	7, 1, 7, 6, 1, 9, 2, 0, 3, 7,	7, 1, 7, 6, 1, 9, 2, 0, 3, 7,	
	1, 7, 5, 5, 7, 1, 1, 1, 0, 0, 6, 7, 2, 3, 6, 6, 1,	1, 0, 0, 4, 5, 4, 4, 2, 9, 4,	1, 0, 0, 4, 5, 4, 4, 2, 9, 4,	
	4, 6, 8, 9, 7, 0, 8, 7, 8, 8, 0, 9, 0, 0, 2, 0, 5,	6, 4, 5, 0, 8, 3, 9, 8, 2, 4,	6, 4, 5, 0, 8, 3, 9, 8, 2, 4,	
	4, 6, 2, 3, 2, 1, 7, 5, 5, 7, 6, 3, 4, 2, 0, 1, 7,	9, 2, 4, 2, 6, 5, 2, 3, 5, 3,	9, 2, 4, 2, 6, 5, 2, 3, 5, 3,	
	7, 0, 5, 9, 3, 0, 6, 6, 1, 0, 2, 1, 6, 2, 4, 9, 8,	8, 7, 6, 1, 2, 7, 9, 8, 7, 4,	8, 7, 6, 1, 2, 7, 9, 8, 7, 4,	
	5, 4, 5, 3, 2, 9, 9, 8, 4, 0, 0, 7, 3, 1, 2, 0, 3,	8, 5, 4, 3, 1, 6, 0, 6, 6, 9,	8, 5, 4, 3, 1, 6, 0, 6, 6, 9,	
	8, 1, 2, 0, 6, 9, 0, 7, 7, 8, 4, 3, 1, 9, 5, 2, 4,	4, 0, 4, 0, 0, 7, 8, 9, 4, 6,	4, 0, 4, 0, 0, 7, 8, 9, 4, 6,	
	1, 6, 5, 4, 7, 8, 4, 7, 5, 9, 6, 9, 4, 4, 8, 4, 7,	7, 4, 3, 3, 7, 8, 7, 5, 7, 7,	7, 4, 3, 3, 7, 8, 7, 5, 7, 7,	
	2, 7, 2, 4, 6, 1, 9, 1, 4, 5, 9, 3, 9, 5, 3, 3, 1,	9, 6, 1, 9, 4, 4, 1, 0, 9, 1,	9, 6, 1, 9, 4, 4, 1, 0, 9, 1,	
	9, 7, 9, 1, 1, 4, 4, 8, 7, 1, 6, 5, 5, 5, 2, 0, 3,	2, 4, 8, 3, 1, 1, 7, 1, 7, 5,	2, 4, 8, 3, 1, 1, 7, 1, 7, 5,	
	4, 8, 1, 8, 7, 1, 6, 0, 2, 5, 7, 8, 0, 2, 2, 5, 8,	5, 7, 1, 1, 1, 0, 0, 6, 7, 2,	5, 7, 1, 1, 1, 0, 0, 6, 7, 2,	
	0, 4, 3, 1, 8, 2, 2, 7, 9, 1, 0, 0, 9, 1, 7, 4, 6,	3, 6, 6, 1, 4, 6, 8, 9, 7, 0,	3, 6, 6, 1, 4, 6, 8, 9, 7, 0,	
	2, 5, 5, 9, 3, 2, 6, 6, 6, 7, 9, 0, 0, 1, 7, 5, 8,	8, 7, 8, 8, 0, 9, 0, 0, 2, 0,	8, 7, 8, 8, 0, 9, 0, 0, 2, 0,	
	9, 4, 1, 7, 0, 1, 2, 7, 5, 3, 7, 3, 9, 6, 4, 6, 8,	5, 4, 6, 2, 3, 2, 1, 7, 5, 5,	5, 4, 6, 2, 3, 2, 1, 7, 5, 5,	
	4, 0, 2, 4, 7, 9, 0, 2, 0, 0, 0, 2, 5, 5, 2, 1, 2,	7, 6, 3, 4, 2, 0, 1, 7, 7, 0,	7, 6, 3, 4, 2, 0, 1, 7, 7, 0,	
	6, 2, 1, 5, 5, 0, 0, 0, 8, 8, 8, 1, 5, 3, 7, 7, 9,	5, 9, 3, 0, 6, 6, 1, 0, 2, 1,	5, 9, 3, 0, 6, 6, 1, 0, 2, 1,	
	9, 4, 6, 7, 0, 2, 3, 7, 8, 8, 0, 9, 5, 9, 1, 0, 6,	6, 2, 4, 9, 8, 5, 4, 5, 3, 2,	6, 2, 4, 9, 8, 5, 4, 5, 3, 2,	
	1, 1, 5, 2, 8, 8, 3, 2, 7, 4, 2, 1, 2, 9, 8, 7, 7,	9, 9, 8, 4, 0, 0, 7, 3, 1, 2,	9, 9, 8, 4, 0, 0, 7, 3, 1, 2,	
	4, 5, 7, 7, 1, 4, 0, 5, 6, 9, 1, 1, 1, 4, 0, 8, 5,	0, 3, 8, 1, 2, 0, 6, 9, 0, 7,	0, 3, 8, 1, 2, 0, 6, 9, 0, 7,	
	0, 0, 3, 7, 5, 1, 0, 8, 6, 3, 4, 0, 1, 1, 8, 3, 8,	7, 8, 4, 3, 1, 9, 5, 2, 4, 1,	7, 8, 4, 3, 1, 9, 5, 2, 4, 1,	
	6, 9, 5, 8, 5, 7, 2, 2, 2, 8, 7, 3, 2, 2, 0, 5, 5,	6, 5, 4, 7, 8, 4, 7, 5, 9, 6,	6, 5, 4, 7, 8, 4, 7, 5, 9, 6,	
	1, 9, 5, 5, 5, 7, 0, 0, 9, 2, 9, 7, 4, 3, 9, 5, 6,	9, 4, 4, 8, 4, 7, 2, 7, 2, 4,	9, 4, 4, 8, 4, 7, 2, 7, 2, 4,	
	9, 5, 2, 4, 3, 8, 3, 0, 2, 6, 8, 9, 9, 8, 5, 0, 3,	6, 1, 9, 1, 4, 5, 9, 3, 9, 5,	6, 1, 9, 1, 4, 5, 9, 3, 9, 5,	
	1, 8, 2, 5, 1, 4, 2, 5, 4, 6, 0, 8, 0, 6, 8, 5, 8,	3, 3, 1, 9, 7, 9, 1, 1, 4, 4,	3, 3, 1, 9, 7, 9, 1, 1, 4, 4,	

Test	Expected	Got
0, 6, 5, 0, 9, 4, 2, 4, 3, 7, 7, 8, 7, 8, 8, 5, 4,	8, 7, 1, 6, 5, 5, 5, 2, 0, 3,	8, 7, 1, 6, 5, 5, 5, 2, 0, 3,
7, 7, 2, 2, 9, 0, 5, 9, 0, 7, 4, 9, 7, 5, 3, 2, 3,	4, 8, 1, 8, 7, 1, 6, 0, 2, 5,	4, 8, 1, 8, 7, 1, 6, 0, 2, 5,
6, 2, 8, 3, 9, 6, 8, 4, 8, 6, 8, 7, 4, 3, 3, 7, 4,	7, 8, 0, 2, 2, 5, 8, 0, 4, 3,	7, 8, 0, 2, 2, 5, 8, 0, 4, 3,
6, 9, 9, 0, 1, 2, 7, 6, 7, 2, 1, 4, 0, 2, 7, 4, 1,	1, 8, 2, 2, 7, 9, 1, 0, 0, 9,	1, 8, 2, 2, 7, 9, 1, 0, 0, 9,
5, 3, 8, 3, 2, 6, 9, 8, 8, 9, 7, 1, 6, 9, 9, 6, 9,	1, 7, 4, 6, 2, 5, 5, 9, 3, 2,	1, 7, 4, 6, 2, 5, 5, 9, 3, 2,
4, 2, 1, 6, 2, 5, 4, 5, 9, 6, 2, 6, 3, 5, 6, 3, 6,	6, 6, 6, 7, 9, 0, 0, 1, 7, 5,	6, 6, 6, 7, 9, 0, 0, 1, 7, 5,
5, 1, 3, 4, 2, 9, 8, 5, 6, 8, 6, 5, 8, 4, 1, 2, 0,	8, 9, 4, 1, 7, 0, 1, 2, 7, 5,	8, 9, 4, 1, 7, 0, 1, 2, 7, 5,
2, 8, 3, 7, 1, 1, 2, 1, 9, 7, 5, 8, 9, 8, 8, 6, 5,	3, 7, 3, 9, 6, 4, 6, 8, 4, 0,	3, 7, 3, 9, 6, 4, 6, 8, 4, 0,
6, 2, 7, 7, 7, 5, 1, 8, 4, 6, 5, 7, 8, 7, 9, 7, 6,	2, 4, 7, 9, 0, 2, 0, 0, 0, 2,	2, 4, 7, 9, 0, 2, 0, 0, 0, 2,
9, 5, 8, 1, 8, 8, 1, 8, 4, 2, 1, 1, 1, 5, 2, 4, 7,	5, 5, 2, 1, 2, 6, 2, 1, 5, 5,	5, 5, 2, 1, 2, 6, 2, 1, 5, 5,
5, 5, 1, 3, 0, 4, 6, 4, 0, 0, 2, 7, 7, 7, 2, 6, 7,	0, 0, 0, 8, 8, 8, 1, 5, 3, 7,	0, 0, 0, 8, 8, 8, 1, 5, 3, 7,
5, 4, 8, 8, 8, 5, 5, 5, 6, 9, 9, 7, 7, 7, 8, 6, 9,	7, 9, 9, 4, 6, 7, 0, 2, 3, 7,	7, 9, 9, 4, 6, 7, 0, 2, 3, 7,
4, 6, 3, 0, 4, 3, 3, 6, 2, 5, 8, 2, 1, 2, 9, 7, 0,	8, 8, 0, 9, 5, 9, 1, 0, 6, 1,	8, 8, 0, 9, 5, 9, 1, 0, 6, 1,
2, 1, 5, 9, 0, 7, 3, 2, 8, 9, 3, 4, 4, 6, 8, 7, 7,	1, 5, 2, 8, 8, 3, 2, 7, 4, 2,	1, 5, 2, 8, 8, 3, 2, 7, 4, 2,
1, 0, 7, 1, 8, 6, 7, 9, 9, 5, 2, 7, 2, 0, 3, 4, 5,	1, 2, 9, 8, 7, 7, 4, 5, 7, 7,	1, 2, 9, 8, 7, 7, 4, 5, 7, 7,
0, 7, 9, 6, 2, 3, 3, 9, 5, 9, 4, 1, 9, 9, 7, 5, 1,	1, 4, 0, 5, 6, 9, 1, 1, 1, 4,	1, 4, 0, 5, 6, 9, 1, 1, 1, 4,
2, 7, 5, 4, 7, 1, 8, 1, 2, 7, 8, 4, 8, 8, 1, 8, 9,	0, 8, 5, 0, 0, 3, 7, 5, 1, 0,	0, 8, 5, 0, 0, 3, 7, 5, 1, 0,
1, 1, 2, 1, 0, 5, 2, 0, 4, 8, 5, 9, 7, 5, 0, 8, 5,	8, 6, 3, 4, 0, 1, 1, 8, 3, 8,	8, 6, 3, 4, 0, 1, 1, 8, 3, 8,
8, 9, 3, 8, 9, 1, 8, 9, 3, 9, 6, 3, 3, 7, 0, 1, 3,	6, 9, 5, 8, 5, 7, 2, 2, 2, 8,	6, 9, 5, 8, 5, 7, 2, 2, 2, 8,
8, 4, 1, 9, 8, 6, 5, 6, 5, 2, 5, 1, 1, 2, 0, 9, 3,	7, 3, 2, 2, 0, 5, 5, 1, 9, 5,	7, 3, 2, 2, 0, 5, 5, 1, 9, 5,
9, 6, 2, 4, 0, 3, 1, 8, 6, 3, 7, 0, 9, 7, 4, 1, 4,	5, 5, 7, 0, 0, 9, 2, 9, 7, 4,	5, 5, 7, 0, 0, 9, 2, 9, 7, 4,
6, 4, 2, 1, 5, 1, 3, 8, 3, 5, 4, 8, 2, 0, 1, 0, 8,	3, 9, 5, 6, 9, 5, 2, 4, 3, 8,	3, 9, 5, 6, 9, 5, 2, 4, 3, 8,
4, 1, 2, 2, 7, 2, 2, 3, 1, 8, 2, 8, 2, 4, 6, 5, 4,	3, 0, 2, 6, 8, 9, 9, 8, 5, 0,	3, 0, 2, 6, 8, 9, 9, 8, 5, 0,
1, 5, 9, 3, 8, 1, 4, 8, 8, 8, 8, 5, 5, 5, 1, 2, 1,	3, 1, 8, 2, 5, 1, 4, 2, 5, 4,	3, 1, 8, 2, 5, 1, 4, 2, 5, 4,
3, 7, 8, 2, 2, 8, 0, 6, 1, 0, 7, 5, 9, 6, 9, 6, 2,	6, 0, 8, 0, 6, 8, 5, 8, 0, 6,	6, 0, 8, 0, 6, 8, 5, 8, 0, 6,
9, 8, 6, 8, 0, 2, 9, 3, 0, 8, 8, 6, 9, 4, 0, 8, 4,	5, 0, 9, 4, 2, 4, 3, 7, 7, 8,	5, 0, 9, 4, 2, 4, 3, 7, 7, 8,
0, 5, 6, 4, 1, 3, 1, 9, 4, 3, 2, 1, 6, 4, 9, 2, 7,	7, 8, 8, 5, 4, 7, 7, 2, 2, 9,	7, 8, 8, 5, 4, 7, 7, 2, 2, 9,
4, 6, 0, 1, 2, 6, 8, 0, 9, 8, 3, 0, 7, 3, 9, 7, 1,	0, 5, 9, 0, 7, 4, 9, 7, 5, 3,	0, 5, 9, 0, 7, 4, 9, 7, 5, 3,
6, 2, 2, 0, 7, 5, 3, 4, 1, 9, 4, 0, 9, 2, 7, 8, 7,	2, 3, 6, 2, 8, 3, 9, 6, 8, 4,	2, 3, 6, 2, 8, 3, 9, 6, 8, 4,
1, 6, 2, 9, 8, 8, 1, 5, 3, 0, 4, 3, 0, 1, 6, 2, 5,	8, 6, 8, 7, 4, 3, 3, 7, 4, 6,	8, 6, 8, 7, 4, 3, 3, 7, 4, 6,
1, 9, 8, 4, 4, 9, 9, 0, 5, 9, 0, 4, 1, 3, 8, 2, 1,	9, 9, 0, 1, 2, 7, 6, 7, 2, 1,	9, 9, 0, 1, 2, 7, 6, 7, 2, 1,
4, 1, 4, 8, 9, 2, 2, 9, 1, 1, 7, 3, 9, 6, 2, 6, 3,	4, 0, 2, 7, 4, 1, 5, 3, 8, 3,	4, 0, 2, 7, 4, 1, 5, 3, 8, 3,
8, 9, 0, 2, 7, 9, 5, 6, 2, 0, 4, 0, 4, 2, 7, 1, 4,	2, 6, 9, 8, 8, 9, 7, 1, 6, 9,	2, 6, 9, 8, 8, 9, 7, 1, 6, 9,
3, 0, 7, 0, 2, 0, 9, 3, 9, 5, 2, 2, 8, 4, 2, 0, 0,	9, 6, 9, 4, 2, 1, 6, 2, 5, 4,	9, 6, 9, 4, 2, 1, 6, 2, 5, 4,
5, 8, 7, 5, 3, 6, 7, 7, 1, 5, 3, 3, 9, 4, 9, 1, 3,	5, 9, 6, 2, 6, 3, 5, 6, 3, 6,	5, 9, 6, 2, 6, 3, 5, 6, 3, 6,
8, 5, 8, 1, 1, 9, 8, 1, 0, 4, 9, 4, 6, 5, 4, 8, 4,	5, 1, 3, 4, 2, 9, 8, 5, 6, 8,	5, 1, 3, 4, 2, 9, 8, 5, 6, 8,

Test	Expected	Got
4, 4, 3, 1, 6, 5, 7, 5, 3, 4, 2, 4, 9, 1, 1, 8, 4,	6, 5, 8, 4, 1, 2, 0, 2, 8, 3,	6, 5, 8, 4, 1, 2, 0, 2, 8, 3,
7, 4, 0, 6, 2, 2, 0, 0, 2, 8, 6, 7, 5, 6, 0, 4, 6,	7, 1, 1, 2, 1, 9, 7, 5, 8, 9,	7, 1, 1, 2, 1, 9, 7, 5, 8, 9,
1, 2, 1, 3, 7, 4, 5, 3, 8, 3, 0, 3, 0, 5, 2, 0, 9,	8, 8, 6, 5, 6, 2, 7, 7, 7, 5,	8, 8, 6, 5, 6, 2, 7, 7, 7, 5,
7, 3, 0, 5, 1, 8, 5, 2, 9, 7, 4, 0, 9, 8, 5, 1, 0,	1, 8, 4, 6, 5, 7, 8, 7, 9, 7,	1, 8, 4, 6, 5, 7, 8, 7, 9, 7,
8, 1, 8, 1, 3, 9, 1, 8, 7, 2, 6, 0, 9, 0, 5, 2, 3,	6, 9, 5, 8, 1, 8, 8, 1, 8, 4,	6, 9, 5, 8, 1, 8, 8, 1, 8, 4,
6, 0, 6, 0, 6, 6, 8, 7, 3, 6, 3, 8, 3, 0, 4, 6, 5,	2, 1, 1, 1, 5, 2, 4, 7, 5, 5,	2, 1, 1, 1, 5, 2, 4, 7, 5, 5,
6, 4, 3, 4, 7,snip, 7, 9, 4, 4, 8, 0, 3,	1, 3, 0, 4, 6, 4, 0, 0, 2, 7,	1, 3, 0, 4, 6, 4, 0, 0, 2, 7,
8, 2, 8, 0, 0, 0, 5, 3, 1, 1, 5, 7, 4, 7, 4, 6, 2,	7, 7, 2, 6, 7, 5, 4, 8, 8, 8,	7, 7, 2, 6, 7, 5, 4, 8, 8, 8,
2, 3, 4, 5, 7, 2, 8, 2, 6, 2, 7, 9, 8, 1, 0, 7, 0,	5, 5, 5, 6, 9, 9, 7, 7, 7, 8,	5, 5, 5, 6, 9, 9, 7, 7, 7, 8,
8, 1, 4, 1, 3, 1, 5, 7, 0, 5, 2, 7, 1, 6, 9, 6, 6,	6, 9, 4, 6, 3, 0, 4, 3, 3, 6,	6, 9, 4, 6, 3, 0, 4, 3, 3, 6,
9, 6, 0, 3, 2, 3, 9, 1, 6, 0, 7, 1, 9, 4, 6, 1, 7,	2, 5, 8, 2, 1, 2, 9, 7, 0, 2,	2, 5, 8, 2, 1, 2, 9, 7, 0, 2,
3, 8, 0, 0, 9, 6, 8, 3, 2, 5, 5, 1, 9, 2, 8, 7, 0,	1, 5, 9, 0, 7, 3, 2, 8, 9, 3,	1, 5, 9, 0, 7, 3, 2, 8, 9, 3,
8, 7, 2, 3, 7, 2, 9, 9, 7, 5, 1, 9, 4, 3, 6, 5, 2,	4, 4, 6, 8, 7, 7, 1, 0, 7, 1,	4, 4, 6, 8, 7, 7, 1, 0, 7, 1,
1, 0, 0, 7, 0, 5, 4, 4, 5, 1, 7, 7, 7, 8, 8, 0, 3,	8, 6, 7, 9, 9, 5, 2, 7, 2, 0,	8, 6, 7, 9, 9, 5, 2, 7, 2, 0,
8, 6, 1, 8, 4, 8, 9, 7, 7, 1, 9, 5, 8, 3, 4, 8, 5,	3, 4, 5, 0, 7, 9, 6, 2, 3, 3,	3, 4, 5, 0, 7, 9, 6, 2, 3, 3,
1, 8, 5, 9, 4, 5, 8, 0, 6, 6, 7, 4, 8, 7, 5, 6, 4,	9, 5, 9, 4, 1, 9, 9, 7, 5, 1,	9, 5, 9, 4, 1, 9, 9, 7, 5, 1,
0, 6, 2, 3, 5, 0, 8, 5, 9, 4, 3, 1, 1, 5, 9, 3, 4,	2, 7, 5, 4, 7, 1, 8, 1, 2, 7,	2, 7, 5, 4, 7, 1, 8, 1, 2, 7,
5, 2, 5, 9, 7, 8, 2, 2, 7, 9, 4, 8, 0, 6, 3, 7, 6,	8, 4, 8, 8, 1, 8, 9, 1, 1, 2,	8, 4, 8, 8, 1, 8, 9, 1, 1, 2,
3, 7, 7, 5, 1, 3, 1, 4, 3, 0, 7, 3, 8, 0, 4, 6, 6,	1, 0, 5, 2, 0, 4, 8, 5, 9, 7,	1, 0, 5, 2, 0, 4, 8, 5, 9, 7,
1, 6, 2, 6, 9, 0, 1, 3, 7, 0, 3, 2, 8, 6, 3, 2, 5,	5, 0, 8, 5, 8, 9, 3, 8, 9, 1,	5, 0, 8, 5, 8, 9, 3, 8, 9, 1,
8, 8, 2, 5, 1, 2, 2, 6, 3, 5, 9, 4, 9, 1, 3, 8, 3,	8, 9, 3, 9, 6, 3, 3, 7, 0, 1,	8, 9, 3, 9, 6, 3, 3, 7, 0, 1,
5, 2, 5, 1, 6, 7, 7, 3, 8, 7, 4, 6, 9, 6, 3, 3, 9,	3, 8, 4, 1, 9, 8, 6, 5, 6, 5,	3, 8, 4, 1, 9, 8, 6, 5, 6, 5,
6, 6, 0, 7, 6, 1, 2, 2, 2, 6, 0, 3, 5, 9, 6, 1, 3,	2, 5, 1, 1, 2, 0, 9, 3, 9, 6,	2, 5, 1, 1, 2, 0, 9, 3, 9, 6,
9, 8, 7, 2, 8, 0, 9, 3, 5, 2, 7, 9, 3, 5, 5, 3, 8,	2, 4, 0, 3, 1, 8, 6, 3, 7, 0,	2, 4, 0, 3, 1, 8, 6, 3, 7, 0,
7, 1, 4, 0, 3, 2, 8, 0, 4, 4, 8, 0, 7, 7, 2, 3, 1,	9, 7, 4, 1, 4, 6, 4, 2, 1, 5,	9, 7, 4, 1, 4, 6, 4, 2, 1, 5,
4, 8, 5, 5, 3, 2, 9, 3, 6, 9, 3, 1, 5, 5, 5, 1, 6,	1, 3, 8, 3, 5, 4, 8, 2, 0, 1,	1, 3, 8, 3, 5, 4, 8, 2, 0, 1,
0, 5, 5, 9, 8, 0, 6, 9, 8, 6, 7, 5, 5, 7, 1, 2, 8,	0, 8, 4, 1, 2, 2, 7, 2, 2, 3,	0, 8, 4, 1, 2, 2, 7, 2, 2, 3,
2, 7, 2, 4, 9, 7, 0, 9, 8, 7, 2, 2, 0, 5, 5, 8, 4,	1, 8, 2, 8, 2, 4, 6, 5, 4, 1,	1, 8, 2, 8, 2, 4, 6, 5, 4, 1,
9, 1, 6, 7, 8, 3, 3, 7, 3, 6, 2, 2, 2, 8, 4, 0, 6,	5, 9, 3, 8, 1, 4, 8, 8, 8, 8,	5, 9, 3, 8, 1, 4, 8, 8, 8, 8,
4, 7, 5, 4, 5, 4, 6, 5, 7, 8, 7, 8, 1, 6, 0, 4, 4,	5, 5, 5, 1, 2, 1, 3, 7, 8, 2,	5, 5, 5, 1, 2, 1, 3, 7, 8, 2,
8, 9, 1, 2, 2, 3, 8, 9, 9, 4, 0, 1, 4, 3, 5, 7, 3,	2, 8, 0, 6, 1, 0, 7, 5, 9, 6,	2, 8, 0, 6, 1, 0, 7, 5, 9, 6,
1, 4, 6, 4, 9, 3, 2, 1, 0, 1, 5, 0, 7, 2, 2, 1, 7,	9, 6, 2, 9, 8, 6, 8, 0, 2, 9,	9, 6, 2, 9, 8, 6, 8, 0, 2, 9,
1, 6, 7, 5, 5, 8, 0, 6, 2, 3, 0, 7, 5, 8, 6, 6, 7,	3, 0, 8, 8, 6, 9, 4, 0, 8, 4,	3, 0, 8, 8, 6, 9, 4, 0, 8, 4,
9, 0, 8, 6, 3, 3, 2, 4, 8, 6, 3, 4, 1, 2, 1, 0, 6,	0, 5, 6, 4, 1, 3, 1, 9, 4, 3,	0, 5, 6, 4, 1, 3, 1, 9, 4, 3,
1, 9, 6, 0, 7, 0, 3, 6, 4, 5, 7, 9, 8, 6, 6, 6, 8,	2, 1, 6, 4, 9, 2, 7, 4, 6, 0,	2, 1, 6, 4, 9, 2, 7, 4, 6, 0,
7, 3, 9, 6, 3, 4, 8, 8, 3, 0, 3, 3, 7, 3, 7, 6, 0,	1, 2, 6, 8, 0, 9, 8, 3, 0, 7,	1, 2, 6, 8, 0, 9, 8, 3, 0, 7,

Test	Expected	Got
1, 4, 4, 2, 1, 1, 2, 7, 0, 5, 6, 9, 1, 9, 4, 5, 1,	3, 9, 7, 1, 6, 2, 2, 0, 7, 5,	3, 9, 7, 1, 6, 2, 2, 0, 7, 5,
7, 0, 2, 6, 9, 2, 0, 0, 6, 5, 8, 3, 4, 1, 8, 3, 4,	3, 4, 1, 9, 4, 0, 9, 2, 7, 8,	3, 4, 1, 9, 4, 0, 9, 2, 7, 8,
6, 7, 4, 9, 1, 4, 4, 1, 8, 0, 7, 3, 2, 0, 1, 6, 6,	7, 1, 6, 2, 9, 8, 8, 1, 5, 3,	7, 1, 6, 2, 9, 8, 8, 1, 5, 3,
9, 1, 4, 5, 6, 1, 7, 0, 6, 8, 0, 2, 9, 0, 3, 3, 9,	0, 4, 3, 0, 1, 6, 2, 5, 1, 9,	0, 4, 3, 0, 1, 6, 2, 5, 1, 9,
3, 9, 5, 8, 6, 9, 1, 2, 6, 1, 8, 8, 9, 6, 4, 6, 8,	8, 4, 4, 9, 9, 0, 5, 9, 0, 4,	8, 4, 4, 9, 9, 0, 5, 9, 0, 4,
2, 9, 3, 0, 5, 4, 8, 6, 3, 0, 2, 7, 9, 9, 9, 4, 1,	1, 3, 8, 2, 1, 4, 1, 4, 8, 9,	1, 3, 8, 2, 1, 4, 1, 4, 8, 9,
7, 1, 0, 8, 0, 1, 4, 1, 6, 8, 5, 3, 4, 2, 6, 9, 3,	2, 2, 9, 1, 1, 7, 3, 9, 6, 2,	2, 2, 9, 1, 1, 7, 3, 9, 6, 2,
3, 7, 7, 1, 0, 2, 5, 9, 7, 5, 5, 8, 3, 2, 1, 0, 6,	6, 3, 8, 9, 0, 2, 7, 9, 5, 6,	6, 3, 8, 9, 0, 2, 7, 9, 5, 6,
5, 5, 9, 7, 4, 9, 8, 0, 4, 5, 8, 3, 4, 2, 8, 8, 0,	2, 0, 4, 0, 4, 2, 7, 1, 4, 3,	2, 0, 4, 0, 4, 2, 7, 1, 4, 3,
5, 1, 8, 8, 9, 0, 0, 9, 0, 2, 3, 2, 5, 8, 3, 7, 8,	0, 7, 0, 2, 0, 9, 3, 9, 5, 2,	0, 7, 0, 2, 0, 9, 3, 9, 5, 2,
0, 6, 5, 3, 5, 9, 6, 8, 6, 6, 0, 6, 3, 8, 0, 3, 4,	2, 8, 4, 2, 0, 0, 5, 8, 7, 5,	2, 8, 4, 2, 0, 0, 5, 8, 7, 5,
9, 7, 0, 9, 0, 4, 6, 3, 6, 1, 1, 5, 8, 7, 8, 2, 1,	3, 6, 7, 7, 1, 5, 3, 3, 9, 4,	3, 6, 7, 7, 1, 5, 3, 3, 9, 4,
1, 2, 7, 1, 2, 8, 7, 5, 1, 7, 9, 3, 7, 0, 0, 3, 8,	9, 1, 3, 8, 5, 8, 1, 1, 9, 8,	9, 1, 3, 8, 5, 8, 1, 1, 9, 8,
0, 7, 9, 6, 8, 7, 4, 0, 3, 0, 5, 8, 6, 4, 2, 0, 0,	1, 0, 4, 9, 4, 6, 5, 4, 8, 4,	1, 0, 4, 9, 4, 6, 5, 4, 8, 4,
8, 0, 7, 8, 0, 2, 7, 8, 4, 0, 6, 5, 9, 2, 2, 8, 4,	4, 4, 3, 1, 6, 5, 7, 5, 3, 4,	4, 4, 3, 1, 6, 5, 7, 5, 3, 4,
5, 6, 0, 1, 5, 2, 6, 2, 3, 4, 2, 6, 7, 1, 1, 2, 7,	2, 4, 9, 1, 1, 8, 4, 7, 4, 0,	2, 4, 9, 1, 1, 8, 4, 7, 4, 0,
2, 3, 9, 2, 2, 2, 1, 6, 5, 0, 0, 8, 2, 1, 8, 9, 8,	6, 2, 2, 0, 0, 2, 8, 6, 7, 5,	6, 2, 2, 0, 0, 2, 8, 6, 7, 5,
5, 1, 2, 0, 7, 1, 7, 4, 3, 7, 7, 2, 6, 7, 2, 4, 4,	6, 0, 4, 6, 1, 2, 1, 3, 7, 4,	6, 0, 4, 6, 1, 2, 1, 3, 7, 4,
9, 3, 9, 5, 3, 0, 0, 2, 7, 4, 9, 3, 9, 9, 6, 2, 8,	5, 3, 8, 3, 0, 3, 0, 5, 2, 0,	5, 3, 8, 3, 0, 3, 0, 5, 2, 0,
0, 4, 9, 6, 3, 0, 2, 5, 2, 2, 6, 3, 6, 0, 3, 4, 3,	9, 7, 3, 0, 5, 1, 8, 5, 2, 9,	9, 7, 3, 0, 5, 1, 8, 5, 2, 9,
9, 0, 6, 4, 3, 0, 3, 5, 8, 9, 5, 6, 5, 1, 7, 0, 1,	7, 4, 0, 9, 8, 5, 1, 0, 8, 1,	7, 4, 0, 9, 8, 5, 1, 0, 8, 1,
0, 9, 7, 9, 5, 0, 3, 4, 3, 4, 1, 1, 2, 0, 1, 0, 7,	8, 1, 3, 9, 1, 8, 7, 2, 6, 0,	8, 1, 3, 9, 1, 8, 7, 2, 6, 0,
7, 5, 0, 3, 3, 7, 1, 0, 7, 4, 2, 5, 4, 9, 4, 3, 4,	9, 0, 5, 2, 3, 6, 0, 6, 0, 6,	9, 0, 5, 2, 3, 6, 0, 6, 0, 6,
9, 3, 6, 8, 6, 3, 5, 9, 5, 9, 6, 9, 7, 2, 1, 6, 5,	6, 8, 7, 3, 6, 3, 8, 3, 0, 4,	6, 8, 7, 3, 6, 3, 8, 3, 0, 4,
4, 5, 3, 8, 3, 2, 0, 1, 8, 1, 9, 4, 6, 2, 3, 6, 5,	6, 5, 6, 4, 3, 4, 7, 8, 7, 8,	6, 5, 6, 4, 3, 4, 7, 8, 7, 8,
8, 3, 5, 8, 3, 3, 1, 9, 0, 9, 1, 6, 1, 9, 2, 6, 4,	4,snip 1, 9, 1, 5, 1,	4,snip 1, 9, 1, 5, 1,
7, 6, 0, 2, 8, 0, 8, 7, 7, 4, 8, 4, 8, 5, 4, 4, 5,	5, 0, 2, 9, 5, 1, 7, 0, 2, 5,	5, 0, 2, 9, 5, 1, 7, 0, 2, 5,
9, 6, 3, 6, 1, 0, 7, 2, 8, 2, 9, 8, 7, 9, 1, 8, 4,	3, 7, 9, 9, 6, 9, 5, 9, 3, 7,	3, 7, 9, 9, 6, 9, 5, 9, 3, 7,
7, 5, 2, 1, 4, 4, 3, 2, 3, 8, 3, 0, 5, 1, 2, 4, 2,	3, 0, 4, 5, 7, 7, 0, 9, 4, 2,	3, 0, 4, 5, 7, 7, 0, 9, 4, 2,
1, 3, 9, 9, 8, 2, 2, 5, 6, 2, 4, 1, 7, 0, 1, 6, 1,	2, 3, 5, 3, 5, 7, 1, 0, 1, 1,	2, 3, 5, 3, 5, 7, 1, 0, 1, 1,
0, 9, 4, 7, 9, 9, 8, 8, 8, 9, 3, 5, 7, 7, 2, 5, 0,	2, 6, 9, 5, 2, 0, 6, 3, 5, 4,	2, 6, 9, 5, 2, 0, 6, 3, 5, 4,
3, 9, 9, 4, 2, 5, 0, 9, 9, 9, 5, 0, 7, 9, 2, 2, 6,	3, 0, 6, 1, 4, 8, 7, 5, 3, 6,	3, 0, 6, 1, 4, 8, 7, 5, 3, 6,
3, 4, 6, 1, 6, 9, 6, 6, 2, 0, 8, 0, 7, 0, 7, 8, 7,	1, 0, 4, 8, 7, 5, 1, 4, 6, 1,	1, 0, 4, 8, 7, 5, 1, 4, 6, 1,
0, 2, 8, 6, 0, 4, 8, 6, 7, 8, 0, 2, 5, 0, 2, 5, 4,	0, 0, 2, 1, 9, 2, 3, 3, 5, 6,	0, 0, 2, 1, 9, 2, 3, 3, 5, 6,
4, 8, 2, 7, 9, 8, 1, 2, 4, 5, 4, 5, 6, 7, 6, 2, 0,	8, 0, 3, 1, 1, 0, 6, 8, 9, 4,	8, 0, 3, 1, 1, 0, 6, 8, 9, 4,
2, 5, 9, 5, 0, 5, 4, 3, 6, 2, 5, 0, 4, 5, 9, 7, 4,	8, 0, 5, 1, 0, 4, 0, 5, 6, 3,	8, 0, 5, 1, 0, 4, 0, 5, 6, 3,

Test	Expected	Got
4, 5, 0, 3, 7, 5, 4, 5, 0, 0, 5, 2, 0, 8, 0, 3, 5,	6, 6, 1, 3, 5, 0, 0, 7, 9, 1,	6, 6, 1, 3, 5, 0, 0, 7, 9, 1,
2, 9, 8, 5, 6, 3, 0, 3, 5, 6, 2, 2, 8, 1, 4, 9, 8,	7, 9, 1, 7, 3, 3, 4, 0, 2, 5,	7, 9, 1, 7, 3, 3, 4, 0, 2, 5,
8, 7, 7, 1, 4, 8, 2, 1, 3, 9, 8, 8, 0, 5, 0, 5, 2,	0, 8, 7, 3, 9, 4, 9, 7, 7, 9,	0, 8, 7, 3, 9, 4, 9, 7, 7, 9,
4, 0, 4, 6, 0, 8, 5, 7, 2, 9, 6, 4, 2, 0, 0, 7, 7,	0, 2, 1, 6, 8, 2, 0, 7, 9, 9,	0, 2, 1, 6, 8, 2, 0, 7, 9, 9,
1, 2, 4, 4, 3, 6, 2, 0, 2, 9, 8, 0, 8, 0, 2, 2, 5,	4, 2, 2, 8, 8, 1, 7, 9, 7, 8,	4, 2, 2, 8, 8, 1, 7, 9, 7, 8,
3, 2, 2, 8, 5, 7, 5, 5, 7, 4, 2, 4, 2, 9, 4, 1, 4,	7, 7, 6, 7, 2, 9, 4, 6, 2, 5,	7, 7, 6, 7, 2, 9, 4, 6, 2, 5,
1, 8, 8, 4, 1, 0, 3, 4, 0, 5, 8, 8, 4, 4, 2, 7, 0,	1, 7, 3, 3, 1, 7, 5, 4, 9, 9,	1, 7, 3, 3, 1, 7, 5, 4, 9, 9,
3, 1, 3, 3, 1, 4, 4, 1, 7, 4, 9, 3, 2, 3, 7, 0, 8,	4, 0, 4, 7, 4, 3, 5, 2, 9, 7,	4, 0, 4, 7, 4, 3, 5, 2, 9, 7,
1, 9, 7, 2, 1, 9, 3, 7, 6, 0, 5, 1, 4};	5, 6, 9, 2, 0, 1, 9, 7, 2, 5,	5, 6, 9, 2, 0, 1, 9, 7, 2, 5,
int k = 5555;	0, 6, 2, 6, 4, 1, 5, 1, 7, 9,	0, 6, 2, 6, 4, 1, 5, 1, 7, 9,
LLNode* head = LLNode::createWithIterators(arr, arr	0, 5, 2, 4, 1, 3, 9, 7, 2, 4,	0, 5, 2, 4, 1, 3, 9, 7, 2, 4,
+ sizeof(arr) / sizeof(int));	0, 9, 2, 6, 6, 2, 9, 1, 1, 3,	0, 9, 2, 6, 6, 2, 9, 1, 1, 3,
LLNode::printList(head);	4, 4, 9, 0, 5, 1, 7, 7, 4, 5,	4, 4, 9, 0, 5, 1, 7, 7, 4, 5,
cout << "\n";	0, 5, 4, 7, 1, 9, 1, 0, 5, 6,	0, 5, 4, 7, 1, 9, 1, 0, 5, 6,
LLNode* newhead = rotateLinkedList(head, k);	3, 4, 2, 0, 1, 6, 6, 5, 4, 0,	3, 4, 2, 0, 1, 6, 6, 5, 4, 0,
LLNode::printList(newhead);	0, 7, 8, 3, 4, 3, 7, 1, 3, 1,	0, 7, 8, 3, 4, 3, 7, 1, 3, 1,
	9, 0, 4, 3, 5, 0, 9, 7, 9, 3,	9, 0, 4, 3, 5, 0, 9, 7, 9, 3,
	0, 2, 9, 3, 0, 8, 0, 0, 5, 2,	0, 2, 9, 3, 0, 8, 0, 0, 5, 2,
	8, 5, 8, 0, 6, 3, 8, 7, 3, 6,	8, 5, 8, 0, 6, 3, 8, 7, 3, 6,
	2, 3, 7, 8, 5, 5, 4, 9, 5, 5,	2, 3, 7, 8, 5, 5, 4, 9, 5, 5,
	3, 7, 7, 0, 0, 0, 0, 5, 4, 6,	3, 7, 7, 0, 0, 0, 0, 5, 4, 6,
	1, 2, 3, 2, 2, 9, 1, 1, 5, 9,	1, 2, 3, 2, 2, 9, 1, 1, 5, 9,
	8, 8, 9, 9, 4, 4, 1, 8, 2, 9,	8, 8, 9, 9, 4, 4, 1, 8, 2, 9,
	9, 0, 8, 0, 2, 2, 3, 9, 3, 3,	9, 0, 8, 0, 2, 2, 3, 9, 3, 3,
	0, 1, 4, 7, 6, 6, 0, 6, 4, 1,	0, 1, 4, 7, 6, 6, 0, 6, 4, 1,
	2, 8, 7, 9, 2, 7, 0, 7, 9, 8,	2, 8, 7, 9, 2, 7, 0, 7, 9, 8,
	0, 8, 7, 4, 4, 2, 3, 5, 0, 2,	0, 8, 7, 4, 4, 2, 3, 5, 0, 2,
	7, 9, 5, 8, 5, 9, 9, 1, 1, 7,	7, 9, 5, 8, 5, 9, 9, 1, 1, 7,
	7, 6, 3, 6, 3, 1, 3, 9, 8, 5,	7, 6, 3, 6, 3, 1, 3, 9, 8, 5,
	6, 1, 3, 6, 1, 1, 7, 0, 4, 5,	6, 1, 3, 6, 1, 1, 7, 0, 4, 5,
	7, 6, 2, 8, 8, 2, 7, 7, 1, 4,	7, 6, 2, 8, 8, 2, 7, 7, 1, 4,
	4, 3, 7, 9, 0, 1, 6, 0, 3, 1,	4, 3, 7, 9, 0, 1, 6, 0, 3, 1,
	2, 6, 8, 2, 2, 1, 1, 0, 6, 9,	2, 6, 8, 2, 2, 1, 1, 0, 6, 9,
	1, 4, 7, 4, 3, 4, 6, 1, 6, 5,	1, 4, 7, 4, 3, 4, 6, 1, 6, 5,
	8, 4, 1, 2, 8, 5, 7, 6, 7, 8,	8, 4, 1, 2, 8, 5, 7, 6, 7, 8,

Test	Expected	Got
	8, 0, 2, 1, 1, 7, 2, 3, 4, 6,	, 8, 0, 2, 1, 1, 7, 2, 3, 4, 6,
	3, 3, 5, 5, 5, 4, 1, 2, 3, 1,	, 3, 3, 5, 5, 5, 4, 1, 2, 3, 1,
	6, 5, 5, 9, 6, 9, 0, 1, 5, 6,	, 6, 5, 5, 9, 6, 9, 0, 1, 5, 6,
	8, 8, 5, 5, 9, 0, 1, 8, 4, 5,	, 8, 8, 5, 5, 9, 0, 1, 8, 4, 5,
	8, 6, 4, 5, 1, 4, 0, 1, 0, 2,	, 8, 6, 4, 5, 1, 4, 0, 1, 0, 2,
	2, 6, 7, 9, 0, 7, 0, 5, 0, 4,	, 2, 6, 7, 9, 0, 7, 0, 5, 0, 4,
	0, 1, 4, 0, 1, 0, 9, 9, 9, 1,	, 0, 1, 4, 0, 1, 0, 9, 9, 9, 1,
	9, 7, 1, 5, 9, 2, 9, 9, 7, 0,	, 9, 7, 1, 5, 9, 2, 9, 9, 7, 0,
	6, 0, 5, 5, 9, 7, 6, 4, 0, 4,	, 6, 0, 5, 5, 9, 7, 6, 4, 0, 4,
	4, 4, 1, 5, 6, 9, 3, 1, 8, 3,	, 4, 4, 1, 5, 6, 9, 3, 1, 8, 3,
	0, 0, 4, 5, 6, 3, 6, 9, 2, 1,	, 0, 0, 4, 5, 6, 3, 6, 9, 2, 1,
	0, 4, 6, 3, 6, 5, 9, 0, 5, 5,	, 0, 4, 6, 3, 6, 5, 9, 0, 5, 5,
	8, 4, 0, 2, 4, 3, 5, 2, 9, 3,	, 8, 4, 0, 2, 4, 3, 5, 2, 9, 3,
	9, 9, 6, 4, 1, 1, 2, 9, 1, 8,	, 9, 9, 6, 4, 1, 1, 2, 9, 1, 8,
	4, 3, 9, 7, 6, 9, 4, 3, 5, 3,	, 4, 3, 9, 7, 6, 9, 4, 3, 5, 3,
	7, 0, 7, 7, 9, 4, 8, 7, 5, 7,	, 7, 0, 7, 7, 9, 4, 8, 7, 5, 7,
	2, 6, 1, 6, 6, 2, 2, 2, 6, 4,	, 2, 6, 1, 6, 6, 2, 2, 2, 6, 4,
	5, 1, 4, 5, 6, 5, 7, 5, 5, 9,	, 5, 1, 4, 5, 6, 5, 7, 5, 5, 9,
	7, 8, 6, 1, 1, 8, 1, 2, 8, 9,	, 7, 8, 6, 1, 1, 8, 1, 2, 8, 9,
	4, 8, 3, 0, 6, 9, 1, 6, 7, 7,	4, 8, 3, 0, 6, 9, 1, 6, 7, 7,
	1, 6, 6, 6, 7, 4, 3, 2, 9, 2,	, 1, 6, 6, 6, 7, 4, 3, 2, 9, 2,
	5, 5, 8, 9, 4, 7, 5, 0, 1, 9,	5, 5, 8, 9, 4, 7, 5, 0, 1, 9,
	2, 0, 0, 8, 9, 0, 8, 7, 8, 3,	, 2, 0, 0, 8, 9, 0, 8, 7, 8, 3,
	6, 6, 2, 6, 5, 2, 0, 5, 6, 1,	6, 6, 2, 6, 5, 2, 0, 5, 6, 1,
	9, 2, 1, 7, 2, 7, 1, 6, 5, 4,	9, 2, 1, 7, 2, 7, 1, 6, 5, 4,
	3, 1, 0, 3, 4, 1, 1, 3, 4, 9,	, 3, 1, 0, 3, 4, 1, 1, 3, 4, 9,
	8, 1, 6, 9, 4, 7, 1, 8, 4, 4,	8, 1, 6, 9, 4, 7, 1, 8, 4, 4,
	9, 4, 3, 4, 0, 6, 0, 5, 9, 4,	9, 4, 3, 4, 0, 6, 0, 5, 9, 4,
	4, 2, 8, 4, 3, 5, 8, 7, 4, 1,	4, 2, 8, 4, 3, 5, 8, 7, 4, 1,
	7, 4, 6, 3, 1, 5, 6, 4, 2, 6,	7, 4, 6, 3, 1, 5, 6, 4, 2, 6,
	4, 6, 1, 1, 2, 3, 4, 5, 6, 5,	4, 6, 1, 1, 2, 3, 4, 5, 6, 5,
	3, 8, 1, 8, 8, 9, 5, 4, 3, 3,	3, 8, 1, 8, 8, 9, 5, 4, 3, 3,
	5, 4, 3, 7, 7, 0, 2, 8, 2, 5,	5, 4, 3, 7, 7, 0, 2, 8, 2, 5,
	0, 4, 1, 6, 0, 9, 5, 5, 6, 3,	, 0, 4, 1, 6, 0, 9, 5, 5, 6, 3,
	8, 4, 9, 8, 8, 0, 9, 6, 3, 8,	, 8, 4, 9, 8, 8, 0, 9, 6, 3, 8,
	8, 2, 4, 1, 5, 2, 1, 2, 3, 4,	8, 2, 4, 1, 5, 2, 1, 2, 3, 4,

8, 5, 8, 5, 0, 2, 4, 8, 8, 6, 8, 5, 8, 5, 0,	6, 6, 9, 9, 0,
4955891578 49558	2, 4, 8, 8, 6,
- - - - - - - - - -	9, 1, 5, 7, 8,
5, 5, 4, 0, 3, 3, 2, 2, 3, 5, 5, 5, 4, 0, 3,	3, 2, 2, 3, 5,
1, 1, 6, 4, 4, 9, 3, 7, 3, 6, 1, 1, 6, 4, 4,	9, 3, 7, 3, 6,
0, 9, 3, 3, 4, 4, 7, 9, 9, 8, 0, 9, 3, 3, 4,	4, 7, 9, 9, 8,
0, 1, 2, 4, 6, 6, 1, 9, 7, 5, 0, 1, 2, 4, 6,	6, 1, 9, 7, 5,
3, 1, 6, 3, 6, 3, 3, 8, 1, 3, 3, 1, 6, 3, 6,	3, 3, 8, 1, 3,
4, 7, 9, 7, 3, 4, 3, 7, 1, 4, 4, 7, 9, 7, 3,	4, 3, 7, 1, 4,
9, 8, 3, 6, 2, 2, 8, 9, 5, 6, 9, 8, 3, 6, 2,	2, 8, 9, 5, 6,
6, 6, 2, 2, 9, 5, 8, 3, 2, 0, 6, 6, 2, 2, 9,	5, 8, 3, 2, 0,
9, 1, 9, 4, 4, 1, 7, 6, 4, 0, 9, 1, 9, 4, 4,	1, 7, 6, 4, 0,
1, 4, 3, 8, 7, 1, 4, 1, 4, 1, 1, 4, 3, 8, 7,	1, 4, 1, 4, 1,
0, 1, 0, 4, 6, 0, 8, 6, 0, 5, 0, 1, 0, 4, 6,	0, 8, 6, 0, 5,
8, 8, 9, 9, 7, 6, 7, 5, 8, 3, 8, 8, 9, 9, 7,	6, 7, 5, 8, 3,
2, 3, 2, 7, 3, 8, 3, 6, 2, 3, 2, 3, 2, 7, 3,	8, 3, 6, 2, 3,
3, 1, 4, 3, 4, 1, 5, 5, 8, 0, 3, 1, 4, 3, 4,	1, 5, 5, 8, 0,
2, 1, 5, 7, 0, 7, 1, 9, 2, 6, 2, 1, 5, 7, 0,	7, 1, 9, 2, 6,
6, 7, 6, 9, 0, 6, 3, 0, 0, 8, 6, 7, 6, 9, 0,	6, 3, 0, 0, 8,
1, 2, 5, 4, 2, 6, 5, 3, 8, 5, 1, 2, 5, 4, 2,	6, 5, 3, 8, 5,
8, 3, 0, 9, 8, 0, 1, 4, 4, 7, 8, 3, 0, 9, 8,	0, 1, 4, 4, 7,
9, 4, 2, 9, 6, 2, 3, 4, 4, 4, 9, 4, 2, 9, 6,	2, 3, 4, 4, 4,
5, 0, 1, 7, 9, 2, 6, 0, 4, 2, 5, 0, 1, 7, 9	2, 6, 0, 4, 2,
5, 1, 3, 6, 9, 6, 8, 9, 0, 2, 5, 1, 3, 6, 9,	6, 8, 9, 0, 2,
5, 5, 8, 3, 2, 4, 9, 2, 4, 6, 5, 5, 8, 3, 2,	4, 9, 2, 4, 6,
8, 1, 9, 4, 9, 5, 5, 7, 4, 3, 8, 1, 9, 4, 9,	5, 5, 7, 4, 3,
2, 4, 1, 8, 0, 2, 3, 8, 0, 1, 2, 4, 1, 8, 0,	2, 3, 8, 0, 1,
6, 3, 6, 2, 5, 6, 0, 3, 1, 7, 6, 3, 6, 2, 5,	6, 0, 3, 1, 7,
	3, 7, 1, 4, 0,
	1, 2, 3, 7, 9,
	5, 6, 7, 7, 2,
	6, 3, 8, 5, 2,
	7, 1, 5, 0, 0,
	2, 9, 3, 7, 6,
	4, 3, 7, 5, 3,
9, 9, 9, 3, 7, 6, 5, 6, 9, 9, 9, 9, 3, 7,	6, 5, 6, 9, 9,

Test	Expected	Got
	2, 0, 8, 1, 9, 1, 8, 8, 8	, 6, 2, 0, 8, 1, 9, 1, 8, 8, 8, 6,
	9, 2, 3, 3, 5, 2, 8, 0, 0	, 3, 9, 2, 3, 3, 5, 2, 8, 0, 0, 3,
	5, 5, 1, 3, 3, 2, 1, 7, 7	, 2, 5, 5, 1, 3, 3, 2, 1, 7, 7, 2,
	2, 0, 5, 9, 5, 6, 7, 8, 5	, 9, 2, 0, 5, 9, 5, 6, 7, 8, 5, 9,
	5, 8, 6, 7, 0, 9, 9, 6, 3	, 8, 5, 8, 6, 7, 0, 9, 9, 6, 3, 8,
	1, 4, 8, 7, 2, 1, 1, 2, 0	, 3, 1, 4, 8, 7, 2, 1, 1, 2, 0, 3,
	6, 7, 3, 5, 9, 2, 2, 2, 2	, 7, 6, 7, 3, 5, 9, 2, 2, 2, 2, 7,
	8, 2, 5, 8, 8, 7, 0, 0, 3	, 4, 8, 2, 5, 8, 8, 7, 0, 0, 3, 4,
	1, 5, 9, 6, 3, 7, 6, 6, 8	, 1, 1, 5, 9, 6, 3, 7, 6, 6, 8, 1,
	8, 0, 3, 1, 2, 9, 6, 0, 2	, 2, 8, 0, 3, 1, 2, 9, 6, 0, 2, 2,
	2, 4, 0, 0, 5, 1, 1, 3, 3	, 8, 2, 4, 0, 0, 5, 1, 1, 3, 3, 8,
	3, 4, 7, 6, 0, 3, 3, 4, 8	, 4, 3, 4, 7, 6, 0, 3, 3, 4, 8, 4,
	0, 8, 1, 1, 3, 4, 8, 4, 3	, 1, 0, 8, 1, 1, 3, 4, 8, 4, 3, 1,
	5, 2, 2, 4, 0, 2, 9, 5, 7	, 7, 5, 2, 2, 4, 0, 2, 9, 5, 7, 7,
	2, 1, 0, 6, 9, 6]	2, 1, 0, 6, 9, 6]

Passed all tests! ✓

Chính xác

Điểm cho bài nộp này: 1,00/1,00.

BÁCH KHOA E-LEARNING



WEBSITE

HCMUT

MyBK

BKSI

LIÊN HỆ

- ♀ 268 Lý Thường Kiệt, P.14, Q.10, TP.HCM
- (028) 38 651 670 (028) 38 647 256 (Ext: 5258, 5234)
- elearning@hcmut.edu.vn

Copyright 2007-2022 BKEL - Phát triển dựa trên Moodle