Problem

You are provided with a vector of N integers. Then, you are given 2 queries. For the first query, you are provided with 1 integer, which denotes a position in the vector. The value at this position in the vector needs to be erased. The next query consists of 2 integers denoting a range of the positions in the vector. The elements which fall under that range should be removed. The second query is performed on the updated vector which we get after performing the first query.

The following are some useful vector functions:

- erase(int position):

```
Removes the element present at position.
Ex: v.erase(v.begin()+4); (erases the fifth element of the vec
```

- erase(int start,int end):

```
Removes the elements in the range from start to end inclusive o
Ex:v.erase(v.begin()+2,v.begin()+5);(erases all the elements
```

Input Format

The first line of the input contains an integer N.The next line contains N space separated integers(1-based index).The third line contains a single integer x,denoting the position of an element that should be removed from the vector.The fourth line contains two integers a and b denoting the range that should be erased from the vector inclusive of a and exclusive of b.

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0
✓ Test case 1
✓ Test case 2
✓ Test case 3
✓ Test case 4
✓ Test case 5
✓ Test case 6

Compiler Message

Success

Input (stdin)   Download

```
1   10
2   956133519 775903982 622784820 95208688 921490983 415165691
    379615994 474543625 387549021 70789301
3   2
4   1 5
```

Expected Output   Download

```
1   5
2   415165691 379615994 474543625 387549021 70789301
```

You are now 40 points away for the gold level for your c++ badge.

Sets are a part of the C++ STL. Sets are containers that store unique elements following a specific order. Here are some of the frequently used member functions of sets:

- Declaration:

```
set<int>s; //Creates a set of integers.
```

- Size:

```
int length=s.size(); //Gives the size of the set.
```

- Insert:

```
s.insert(x); //Inserts an integer x into the set s.
```

- Erasing an element:

```
s.erase(val); //Erases an integer val from the set s.
```

- Finding an element:

```
set<int>::iterator itr=s.find(val); //Gives the iterator to th
Ex: set<int>::iterator itr=s.find(100); //If 100 is not presen
```

To know more about sets click Here. Coming to the problem, you will be given Q queries. Each query is of one of the following three types:

Congratulations

You solved this challenge. Would you like to challenge your friends?   f   y   in

Next Challenge

| ✓ Test case 0 🔒 |
| ✓ Test case 1 🔒 |
| ✓ Test case 2 🔒 |
| ✓ Test case 3 🔒 |
| ✓ Test case 4 🔒 |
| ✓ Test case 5 🔒 |
| ✓ Test case 6 🔒 |

Compiler Message

Success

Input (stdin)   Download

```
1   16
2   1 1
3   1 10
4   2 7
5   3 4
6   3 6
7   1 8
8   1 4
9   1 6
```

Problem

Design a class named Box whose dimensions are integers and private to the class. The dimensions are labelled: length l, breadth b, and height h.

The default constructor of the class should initialize l, b, and h to 0.

The parameterized constructor Box(int length, int breadth, int height) should initialize Box's l, b and h to length, breadth and height.

The copy constructor Box(Box B) should set l, b and h to B's l, b and h, respectively.

Apart from the above, the class should have **4** functions:

- int getLength() - Return box's length
- int getBreadth() - Return box's breadth
- int getHeight() - Return box's height
- long long CalculateVolume() - Return the volume of the box

Overload the operator $<$ for the class Box. Box A < Box B if:

1. $A.l < B.l$
2. $A.b < B.b$ and $A.l == B.l$
3. $A.h < B.h$ and $A.b == B.b$ and $A.l == B.l$

Overload operator $<<$ for the class Box().

If B is an object of class Box:

$cout << B$ should print $B.l$, $B.b$ and $B.h$ on a single line separated by spaces.

For example,

```
Box  b1;  // Should set b1.l = b1.b = b1.h = 0;
Box  b2(2, 3, 4);  // Should set b1.l = 2, b1.b = 3, b1.h = 4;
b2.getLength();       // Should return 2
```

Congratulations

You solved this challenge. Would you like to challenge your friends?   f y in

Next Challenge

✓ Test case 0	Compiler Message	
✓ Test case 1 🔒	**Success**	
✓ Test case 2 🔒	Input (stdin)	Download
✓ Test case 3 🔒	1 **5**	
	2 **2 3 4 5**	
	3 **4**	
✓ Test case 4 🔒	4 **5**	
	5 **4**	
✓ Test case 5 🔒	6 **2 4 6 7**	

Expected Output   Download

1 **3 4 5**

You are given N integers.Sort the N integers and print the sorted order.

Store the N integers in a vector.Vectors are sequence containers representing arrays that can change in size.

- Declaration:

```
vector<int>v; (creates an empty vector of integers)
```

- Size:

```
int size=v.size();
```

- Pushing an integer into a vector:

```
v.push_back(x);(where x is an integer.The size increases by 1 a
```

- Popping the last element from the vector:

```
v.pop_back(); (After this the size decreases by 1)
```

- Sorting a vector:

```
sort(v.begin(),v.end()); (Will sort all the elements in the ved
```

To know more about vectors, Click Here

You are now 70 points away from the gold level for your c++ badge.

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0

✓ Test case 1

✓ Test case 2

✓ Test case 3

✓ Test case 4

✓ Test case 5

✓ Test case 6

Compiler Message

Success

Input (stdin)   Download

```
1  8
2  14471476 365354610 530873347 420795654 815018770 704756372
   246818675 490841892
```

Expected Output   Download

```
1  14471476 246818675 365354610 420795654 490841892 530873347
   704756372 815018770
```

You are now 55 points away from the gold level for your c++ badge.

You are given N integers in sorted order. Also, you are given Q queries. In each query, you will be given an integer and you have to tell whether that integer is present in the array. If so, you have to tell at which index it is present and if it is not present, you have to tell the index at which the smallest integer that is just greater than the given number is present.

Lower bound is a function that can be used with a sorted vector. Learn how to use lower bound to solve this problem by clicking here.

Input Format

The first line of the input contains the number of integers N. The next line contains N integers in sorted order. The next line contains Q, the number of queries. Then Q lines follow each containing a single integer Y.

Note: If the same number is present multiple times, you have to print the first index at which it occurs. Also, the input is such that you always have an answer for each query.

Constraints

- $1 \le N \le 10^5$
- $1 \le X_i \le 10^9$, where X_i is i^{th} element in the array.
- $1 \le Q \le 10^5$
- $1 \le Y \le 10^9$

Output Format

For each query you have to print "Yes" (without the quotes) if the number is present and at which index(1-based) it is present separated by a space.

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

Test case 0	🔒
Test case 1	🔒
Test case 2	🔒
Test case 3	🔒
Test case 4	🔒
Test case 5	🔒
Test case 6	🔒

Compiler Message

Success

Input (stdin)   Download

```
1  9
2  2 4 6 8 9 10 13 15 15
3  3
4  11
5  14
6  7
```

Expected Output   Download

```
1  No 7
```

21/44 challenges solved.

Problem

This challenge is an extension of a previous challenge named Inheritance-Introduction. We highly recommend solving Inheritance-Introduction before solving this problem.

In the previous problem, we learned about inheritance and how can a derived class object use the member functions of the base class.

In this challenge, we explore multi-level inheritance. Suppose, we have a class A which is the base class and we have a class B which is derived from class A and we have a class C which is derived from class B, we can access the functions of both class A and class B by creating an object for class C. Hence, this mechanism is called multi-level inheritance. (B inherits A and C inherits B.)

Create a class called Equilateral which inherits from Isosceles and should have a function such that the output is as given below.

Sample Output

```
I am an equilateral triangle
I am an isosceles triangle
I am a triangle
```

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ **Test case 0**

Compiler Message

Success

Expected Output   Download

1 **I am an equilateral triangle**

2 **I am an isosceles triangle**

3 **I am a triangle**

You are now 25 points away from the gold level for your c++ badge.

Maps are a part of the C++ STL.Maps are associative containers that store elements formed by a combination of a key value and a mapped value, following a specific order.The mainly used member functions of maps are:

- Map Template:

```
std::map <key_type, data_type>
```

- Declaration:

```
map<string,int>m; //Creates a map m where key_type is of type s
```

- Size:

```
int length=m.size(); //Gives the size of the map.
```

- Insert:

```
m.insert(make_pair("hello",9)); //Here the pair is inserted in
```

- Erasing an element:

```
m.erase(val); //Erases the pair from the map where the key_type
```

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0 🔒		Compiler Message
✓ Test case 1 🔒		Success
✓ Test case 2 🔒		Input (stdin)
✓ Test case 3 🔒		Download
✓ Test case 4 🔒		1 8
✓ Test case 5 🔒		2 1 z 190
✓ Test case 6 🔒		3 1 ns 257
		4 3 z
		5 2 bmo
		6 1 z 129
		7 3 ns
		8 3 z
		9 2 z

Problem

struct is a way to combine multiple fields to represent a composite data structure, which further lays the foundation for Object Oriented Programming. For example, we can store details related to a student in a struct consisting of his age (int), first_name (string), last_name (string) and standard (int).

struct can be represented as

```
struct NewType {
    type1 value1;
    type2 value2;
    .
    .
    .
    typeN valueN;
};
```

You have to create a struct, named Student, representing the student's details, as mentioned above, and store the data of a student.

Input Format

Input will consist of four lines.

The first line will contain an integer, representing age.

The second line will contain a string, consisting of lower-case Latin characters ('a'-'z'), representing the first_name of a student.

The third line will contain another string, consisting of lower-case Latin characters ('a'-'z'), representing the last_name of a student.

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0

✓ Test case 1 🔒

✓ Test case 2 🔒

✓ Test case 3 🔒

✓ Test case 4 🔒

✓ Test case 5 🔒

Compiler Message

Success

Input (stdin)   Download

```
1  15
2  john
3  carmack
4  10
```

Expected Output   Download

```
1  15 john carmack 10
```

You are now 5 points away from the gold level for your c++ badge.

In this challenge, the task is to debug the existing code to successfully execute all provided test files.

You are required to extend the existing code so that it handles std::invalid_argument exception properly. More specifically, you have to extend the implementation of process_input function. It takes integer n as an argument and has to work as follows:

1. It calls function largest_proper_divisor(n).

2. If this call returns a value without raising an exception, it should print in a single line result=d where d is the returned value.

3. Otherwise, if the call raises a std::invalid_argument exception, it has to print in a single line the string representation of the raised exception, i.e. its message.

4. Finally, no matter if the exception is raised or not, it should print in a single line returning control flow to caller after any other previously printed output.

To keep the code quality high, you are advised to have exactly one line printing returning control flow to caller in the body of process_input function.

Your function will be tested against several cases by the locked template code.

Input Format

The input is read by the provided locked code template. In the only line of the input, there is a single integer n, which is going to be the argument passed to function process_input.

Constraints

- $0 \leq n \leq 100$

Congratulations

You solved this challenge. Would you like to challenge your friends? f ⌄ in

Next Challenge

✓ Test case 0

✓ Test case 1

✓ Test case 2 🔒

✓ Test case 3 🔒

✓ Test case 4 🔒

✓ Test case 5 🔒

✓ Test case 6 🔒

Compiler Message

Success

Input (stdin)   Download

1 0

Expected Output   Download

1 largest proper divisor is not defined for n=0

2 returning control flow to caller

Problem

In real life applications and systems, a common component is a messaging system. Thea idea is that a sender sends messages to the recipient. The messages might be sent for example over the network. However, some network protocols don't guarantee to preserve the order of sent messages while they are received by the recipient. For example, if someone sends a text messages `hello`, `hi` and `what's up`, they might be received in the order `what's up`, `hello`, `hi`. In many systems the expected behavior is to preserve the order, so the order of sent messages is the same as the order of received messages.

In this problem, the task is to implement a software layer over the top of a network protocol sending messages in arbitrary order, in such a way that the sent messages are printed by the recipient in the order they were sent.

In the template code below, there are implementations of classes `Recipient` and `Network`.

Your task is to implement classes `Message` and `MessageFactory` according to the below specification:

Class `Message` is required to store a text value of type `std::string` and provide a public getter `const string& get_text()` which is expected to return this text value. Besides that, it should implement the `<` operator that will be used in `fix_order()` method of the recipient to fix the order of received messages. Feel free to implement any other methods and class/instance variables. In particular, you can implement any additional constructors, but make sure that you provide an empty constructor, i.e. the one without arguments.

Class `MessageFactory` is required to have an empty constructor, and implement a method `Message create_message(const string& text)` that is expected to

C++
CPP
★★★★★

You have earned 40.00 points!
19/44 challenges solved.

43%

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

	Test case 0
	Test case 1 🔒
	Test case 2 🔒
	Test case 3 🔒
	Test case 4 🔒
	Test case 5 🔒

Compiler Message

Success

Input (stdin)

```
1  Alex
2  Hello Monique!
3  What'up?
4  Not much :(
```

Download

Expected Output

Download

You are now 25 points away from the 2nd star for your c++ badge.

Objective

In this challenge, we practice reading input from stdin and printing output to stdout.

In C++, you can read a single whitespace-separated token of input using cin, and print output to stdout using cout. For example, let's say we declare the following variables:

```
string s;
int n;
```

and we want to use cin to read the input "High 5" from stdin. We can do this with the following code:

```
cin >> s >> n;
```

This reads the first word ("High") from stdin and saves it as string s, then reads the second word ("5") from stdin and saves it as integer n. If we want to print these values to stdout, separated by a space, we write the following code:

```
cout << s << " " << n << endl;
```

This code prints the contents of string s, a single space (" "), then the integer n. We end our line of output with a newline using endl. This results in the following output:

```
High 5
```

Task

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ **Test case 0**

✓ Test case 1 🔒

✓ Test case 2 🔒

✓ Test case 3 🔒

✓ Test case 4 🔒

✓ Test case 5 🔒

Compiler Message

Success

Input (stdin)   Download

1   **1 2 7**

Expected Output   Download

1   **10**

Problem

if and else are two of the most frequently used conditionals in C/C++, and they enable you to execute zero or one conditional statement among many such dependent conditional statements. We use them in the following ways:

1. if: This executes the body of bracketed code starting with *statement1* if *condition* evaluates to true.

```
if (condition) {
    statement1;
    ...
}
```

2. if - else: This executes the body of bracketed code starting with *statement1* if *condition* evaluates to true, or it executes the body of code starting with *statement2* if *condition* evaluates to false. Note that only one of the bracketed code sections will ever be executed.

```
if (condition) {
    statement1;
    ...
}
else {
    statement2;
    ...
}
```

3. if - else if - else: In this structure, dependent statements are chained together and the *condition* for each statement is only checked if all prior conditions in the chain

---

C++ CPP

You have earned 10.00 points!
You are now 5 points away from the 2nd star for your c++ badge.

83%   35/40

Congratulations
You solved this challenge. Would you like to challenge your friends? f 𝕏 in

Next Challenge

✓ Test case 0

✓ Test case 1

✓ Test case 2

✓ Test case 3 🔒

✓ Test case 4 🔒

✓ Test case 5 🔒

✓ Test case 6 🔒

Compiler Message

Success

Input (stdin)   Download

1   5

Expected Output   Download

1   five

Upload Code as File

☐ Test against custom input

Run Code | Submit Code

Some C++ data types, their format specifiers, and their most common bit widths are as follows:

- Int ("%d"): 32 Bit integer
- Long ("%ld"): 64 bit integer
- Char ("%c"): Character type
- Float ("%f"): 32 bit real value
- Double ("%lf"): 64 bit real value

Reading

To read a data type, use the following syntax:

```
scanf("`format_specifier`", &val)
```

For example, to read a character followed by a double:

```
char ch;
double d;
scanf("%c %lf", &ch, &d);
```

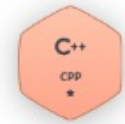For the moment, we can ignore the spacing between format specifiers.

Printing

To print a data type, use the following syntax:

```
printf("`format_specifier`", val)
```

C++ CPP

You have earned 10.00 points!
You are now 15 points away from the 2nd star for your c++ badge.

50%   25/40

Congratulations
You solved this challenge. Would you like to challenge your friends? 🇫 🐦 in

Next Challenge

✓ **Test case 0**

✓ Test case 1 🔒

✓ Test case 2 🔒

✓ Test case 3 🔒

Compiler Message

Success

Input (stdin)   Download

1 | 3 12345678912345 a 334.23 14049.30493

Expected Output   Download

Functions are a bunch of statements glued together. A function is provided with zero or more arguments, and it executes the statements on it. Based on the return type, it either returns nothing (void) or something.

The syntax for a function is

```
return_type function_name(arg_type_1 arg_1, arg_type_2 arg_2, ..
    ...
    ...
    ...
    [if return_type is non void]
        return something of type `return_type`;
}
```

For example, a function to return the sum of four parameters can be written as

```
int sum_of_four(int a, int b, int c, int d) {
    int sum = 0;
    sum += a;
    sum += b;
    sum += c;
    sum += d;
    return sum;
}
```

Write a function int max_of_four(int a, int b, int c, int d) which returns the maximum of the four arguments it receives.

C++
CPP
**

You have earned 10.00 points!
You are now 15 points away from the 3rd star for your c++ badge.

50%   55/70

Congratulations

You solved this challenge. Would you like to challenge your friends?   f   y   in

Next Challenge

✓ Test case 0

✓ Test case 1 🔒

✓ Test case 2 🔒

✓ Test case 3 🔒

✓ Test case 4 🔒

Compiler Message

Success

Input (stdin)   Download

1 | 3
2 | 4
3 | 6
4 | 5

Expected Output   Download

A for loop is a programming language statement which allows code to be repeatedly executed.

The syntax is

```
for ( <expression_1> ; <expression_2> ; <expression_3> )
    <statement>
```

- expression_1 is used for intializing variables which are generally used for controlling the terminating flag for the loop.
- expression_2 is used to check for the terminating condition. If this evaluates to false, then the loop is terminated.
- expression_3 is generally used to update the flags/variables.

A sample loop is

```
for(int i = 0; i < 10; i++) {
    ...
}
```

In this challenge, you will use a for loop to increment a variable through a range.

Input Format

You will be given two positive integers, a and b $(a \leq b)$, separated by a newline.

Output Format

For each integer n in the inclusive interval $[a, b]$:

- If $1 \leq n \leq 9$, then print the English representation of it in lowercase. That is "one" for

---

C++
CPP
**

You have earned 10.00 points!
You are now 25 points away from the 3rd star for your c++ badge.

17%   45/70

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ **Test case 0**	Compiler Message
✓ Test case 1 🔒	**Success**
✓ Test case 2 🔒	Input (stdin) Download
	1 **8**
	2 **11**
✓ Test case 3 🔒	
✓ Test case 4 🔒	Expected Output Download
	1 **eight**
✓ Test case 5 🔒	

9 24°C
Mostly cloudy

Q Search

ENG
IN

6:46 PM
11/13/2025

This challenge works with a custom-designed markup language HRML. In HRML, each element consists of a starting and ending tag, and there are attributes associated with each tag. Only starting tags can have attributes. We can call an attribute by referencing the tag, followed by a tilde, '~' and the name of the attribute. The tags may also be nested.

The opening tags follow the format:

```
<tag-name attribute1-name = "value1" attribute2-name = "value2"
...>
```

The closing tags follow the format:

```
</tag-name>
```

The attributes are referenced as:

```
tag1~value
tag1.tag2~name
```

Given the source code in HRML format consisting of N lines, answer Q queries. For each query, print the value of the attribute specified. Print "Not Found!" if the attribute does not exist.

Example

```
HRML listing
<tag1 value = "value">
<tag2 name = "name">
<tag3 another="another" final="final">
```

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0

✓ Test case 1 🔒

✓ Test case 2 🔒

✓ Test case 3 🔒

✓ Test case 4 🔒

✓ Test case 5 🔒

Compiler Message

Success

Input (stdin)   Download

```
1   4 3
2   <tag1 value = "HelloWorld">
3   <tag2 name = "Name1">
4   </tag2>
5   </tag1>
6   tag1.tag2~name
7   tag1~name
8   tag1~value
```

Problem

A pointer in C++ is used to share a memory address among different contexts (primarily functions). They are used whenever a function needs to modify the content of a variable, but it does not have ownership.

In order to access the memory address of a variable, val, prepend it with & sign. For example, &val returns the memory address of val.

This memory address is assigned to a pointer and can be shared among functions. For example, $int^* p = \&val$ assigns the memory address of val to pointer p. To access the content of the memory pointed to, prepend the variable name with a *. For example, *p will return the value stored in val and any modification to it will be performed on val.

```
void increment(int *v) {
    (*v)++;
}

int main() {
    int a;
    scanf("%d", &a);
    increment(&a);
    printf("%d", a);
    return 0;
}
```

Function Description

Complete the update function in the editor below.

update has the following parameters:

Congratulations

You solved this challenge. Would you like to challenge your friends? [f] [y] [in]

NextChallenge

✓ **Test case 0**

✓ Test case 1 🔒

✓ Test case 2 🔒

✓ Test case 3 🔒

✓ Test case 4 🔒

Compiler Message

Success

Input (stdin)   Download

| 1 | 4 |
| 2 | 5 |

Expected Output   Download

| 1 | 9 |
| 2 | 1 |

You are now 100 points away from the gold level for your c++ badge.

0%   150/250

C++ provides a nice alternative data type to manipulate strings, and the data type is conveniently called string. Some of its widely used features are the following:

- Declaration:

```
string a = "abc";
```

- Size:

```
int len = a.size();
```

- Concatenate two strings:

```
string a = "abc";
string b = "def";
string c = a + b; // c = "abcdef".
```

- Accessing i^{th} element:

```
string s = "abc";
char  c0 = s[0];  // c0 = 'a'
char  c1 = s[1];  // c1 = 'b'
char  c2 = s[2];  // c2 = 'c'

s[0] = 'z';       // s = "zbc"
```

P.S.: We will use cin/cout to read/write a string.

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0	Compiler Message
✓ Test case 1 🔒	Success
✓ Test case 2 🔒	Input (stdin) Download
✓ Test case 3 🔒	1 abcd
	2 ef
✓ Test case 4 🔒	Expected Output Download
✓ Test case 5 🔒	1 4 2
	2 abcdef
	3 ebcd af

24°C
Mostly cloudy

Q Search

ENG
IN

9:19 PM
11/13/2025

You are now 45 points away from the 4th star for your c++ badge.

Problem

Consider an n-element array, a, where each index i in the array contains a reference to an array of k_i integers (where the value of k_i varies from array to array). See the Explanation section below for a diagram.

Given a, you must answer q queries. Each query is in the format i j, where i denotes an index in array a and j denotes an index in the array located at $a[i]$. For each query, find and print the value of element j in the array at location $a[i]$ on a new line.

Click here to know more about how to create variable sized arrays in C++.

Input Format

The first line contains two space-separated integers denoting the respective values of n (the number of variable-length arrays) and q (the number of queries).

Each line i of the n subsequent lines contains a space-separated sequence in the format k a[i]₀ a[i]₁ ... a[i]ₖ₋₁ describing the k-element array located at $a[i]$.

Each of the q subsequent lines contains two space-separated integers describing the respective values of i (an index in array a) and j (an index in the array referenced by $a[i]$) for a query.

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq q \leq 10^5$
- $1 \leq k \leq 3 \cdot 10^5$
- $n \leq \sum k \leq 3 \cdot 10^5$
- $0 \leq i < n$
- $0 \leq j < k$

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0 🔒	Compiler Message
✓ Test case 1 🔒	**Success**
✓ Test case 2 🔒	Input (stdin)
✓ Test case 3 🔒	Download
✓ Test case 4 🔒	
✓ Test case 5 🔒	
✓ Test case 6 🔒	

```
1   10 10
2   3 916135 272188 794963
3   3 178997 502468 671251
4   1 122266
5   3 223511 996043 990104
6   3 319694 335208 200789
7   2 867809 273793
8   1 925358
9   1 71140
```

You are now 75 points away from the 4th star for your c++ badge.

An array is a series of elements of the same type placed in contiguous memory locations that can be individually referenced by adding an index to a unique identifier.

For arrays of a known size, 10 in this case, use the following declaration:

```
int arr[10]; //Declares an array named arr of size 10, i.e, you ca
store 10 integers.
```

Note Unlike C, C++ allows dynamic allocation of arrays at runtime without special calls like malloc(). If $n = 10$, int arr[n] will create an array with space for 10 integers.

Accessing elements of an array:

```
Indexing in arrays starts from 0.So the first element is stored a
arr[0],the second element at arr[1] and so on through arr[9].
```

You will be given an array of N integers and you have to print the integers in the reverse order.

Input Format

The first line of the input contains N,where N is the number of integers.The next line contains N space-separated integers.

Constraints

$1 <= N <= 1000$

$1 <= A[i] <= 10000$, where $A[i]$ is the ith integer in the array.

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

Next Challenge

✓ Test case 0 🔒
✓ Test case 1 🔒
✓ Test case 2 🔒
✓ Test case 3 🔒
✓ Test case 4 🔒
✓ Test case 5 🔒
✓ Test case 6 🔒

Compiler Message

Success

Input (stdin)   Download

```
1  8
2  6676 3216 4063 8373 423 586 8850 6762
```

Expected Output   Download

```
1  6762 8850 586 423 8373 4063 3216 6676
```

🔒Hidden Test Case

24°C
Mostly cloudy

Q Search

ENG
IN

8:24 PM
11/13/2025

Problem

You inherited a piece of code that performs username validation for your company's website. The existing function works reasonably well, but it throws an exception when the username is too short. Upon review, you realize that nobody ever defined the exception.

The inherited code is provided for you in the locked section of your editor. Complete the code so that, when an exception is thrown, it prints `Too short: n` (where n is the length of the given username).

Input Format

The first line contains an integer, t, the number of test cases.

Each of the t subsequent lines describes a test case as a single username string, u.

Constraints

- $1 \le t \le 1000$
- $1 \le |u| \le 100$
- The username consists only of uppercase and lowercase letters.

Output Format

You are not responsible for directly printing anything to stdout. If your code is correct, the locked stub code in your editor will print either `Valid` (if the username is valid), `Invalid` (if the username is invalid), or `Too short: n` (where n is the length of the too-short username) on a new line for each test case.

Sample Input

```
3
```

C++
CPP
*****

You have earned 30.00 points!
24/44 challenges solved.

55%

Congratulations

You solved this challenge. Would you like to challenge your friends?

NextChallenge

✓ Test case 0	
✓ Test case 1 🔒	
✓ Test case 2 🔒	
✓ Test case 3 🔒	
✓ Test case 4 🔒	
✓ Test case 5 🔒	
✓ Test case 6 🔒	

Compiler Message

Success

Input (stdin)   Download

```
1  3
2  Peter
3  Me
4  Arxwwz
```

Expected Output   Download

```
1  Valid
2  Too short: 2
```

25/44 challenges solved.

57%

Given a text file with many lines of numbers to format and print, for each row of 3 space-separated doubles, format and print the numbers using the specifications in the Output Format section below.

Input Format

The first line contains an integer, T, the number of test cases.

Each of the T subsequent lines describes a test case as 3 space-separated floating-point numbers: A, B, and C, respectively.

Constraints

- $1 \leq T \leq 1000$
- Each number will fit into a double.

Output Format

For each test case, print 3 lines containing the formatted A, B, and C, respectively. Each A, B, and C must be formatted as follows:

1. A: Strip its decimal (i.e., truncate it) and print its hexadecimal representation (including the **0x** prefix) in lower case letters.

2. B: Print it to a scale of 2 decimal places, preceded by a $+$ or $-$ sign (indicating if it's positive or negative), right justified, and left-padded with underscores so that the printed result is exactly 15 characters wide.

3. C: Print it to a scale of exactly nine decimal places, expressed in scientific notation using upper case.

Sample Input

Congratulations

You solved this challenge. Would you like to challenge your friends? **f 𝕐 in**

Next Challenge

✓ **Test case 0**

✓ Test case 1 🔒

✓ Test case 2 🔒

✓ Test case 3 🔒

✓ Test case 4 🔒

✓ Test case 5 🔒

✓ Test case 6 🔒

Compiler Message

Success

Input (stdin)   Download

```
1   1
2   100.345 2006.008 2331.41592653498
```

Expected Output   Download

```
1   0x64
2   _____+2006.01
3   2.331415927E+03
```

22/44 challenges solved.

Abstract base classes in C++ can only be used as base classes. Thus, they are allowed to have virtual member functions without definitions.

A cache is a component that stores data so future requests for that data can be served faster. The data stored in a cache might be the results of an earlier computation, or the duplicates of data stored elsewhere. A cache hit occurs when the requested data can be found in a cache, while a cache miss occurs when it cannot. Cache hits are served by reading data from the cache which is faster than recomputing a result or reading from a slower data store. Thus, the more requests that can be served from the cache, the faster the system performs.

One of the popular cache replacement policies is: "least recently used" (LRU). It discards the least recently used items first.

For example, if a cache with a capacity to store 5 keys has the following state(arranged from most recently used key to least recently used key) -

```
5 3 2 1 4
```

Now, If the next key comes as 1(which is a cache hit), then the cache state in the same order will be -

```
1 5 3 2 4
```

Now, If the next key comes as 6(which is a cache miss), then the cache state in the same order will be -

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

Test case 0		Compiler Message
Test case 1 🔒		**Success**
Test case 2 🔒		
Test case 3 🔒		Input (stdin) Download
Test case 4 🔒		1 **3 1**
		2 **set 1 2**
Test case 5 🔒		3 **get 1**
Test case 6 🔒		4 **get 2**

Expected Output   Download

```
1  2
2  -1
```

23/44 challenges solved.

52%

Problem

A class defines a blueprint for an object. We use the same syntax to declare objects of a class as we use to declare variables of other basic types. For example:

```
Box box1;         // Declares variable box1 of type Box
Box box2;         // Declare variable box2 of type Box
```

Kristen is a contender for valedictorian of her high school. She wants to know how many students (if any) have scored higher than her in the 5 exams given during this semester.

Create a class named *Student* with the following specifications:

- An instance variable named *scores* to hold a student's 5 exam scores.
- A void input() function that reads 5 integers and saves them to *scores*.
- An int calculateTotalScore() function that returns the sum of the student's scores.

Input Format

Most of the input is handled for you by the locked code in the editor.

In the `void Student::input()` function, you must read 5 scores from stdin and save them to your *scores* instance variable.

Constraints

$1 \le n \le 100$

$0 \le examscore \le 50$

Output Format

In the `int Student::calculateTotalScore()` function, you must return the student's total grade (the sum of the values in *scores*).

Congratulations

You solved this challenge. Would you like to challenge your friends? f y in

NextChallenge

⊘ **Test case 0**	
⊘ Test case 1 🔒	
⊘ Test case 2 🔒	
⊘ Test case 3 🔒	
⊘ Test case 4 🔒	
⊘ Test case 5 🔒	
⊘ Test case 6 🔒	

Compiler Message

Success

Input (stdin)   Download

```
1  3
2  30 40 45 10 10
3  40 40 40 10 10
4  50 20 30 10 10
```

Expected Output   Download

```
1  1
```

2 cm of rain
Today

Q Search

ENG
IN

9:07 AM
11/17/2025

In this challenge, you are required to compute the area of a rectangle using classes.

Create two classes:

Rectangle

The Rectangle class should have two data fields-width and height of int types. The class should have display() method, to print the width and height of the rectangle separated by space.

RectangleArea

The RectangleArea class is derived from Rectangle class, i.e., it is the sub-class of Rectangle class. The class should have read_input() method, to read the values of width and height of the rectangle. The RectangleArea class should also overload the display() method to print the area ($width \times height$) of the rectangle.

Input Format

The first and only line of input contains two space separated integers denoting the width and height of the rectangle.

Constraints

- $1 \le width, height \le 100$

Output Format

The output should consist of exactly two lines:

In the first line, print the width and height of the rectangle separated by space.

In the second line, print the area of the rectangle.

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

| Test case 0 |
| Test case 1 |
| Test case 2 |
| Test case 3 |
| Test case 4 |
| Test case 5 |
| Test case 6 |

Compiler Message

Success

Input (stdin)   Download

1 10 5

Expected Output   Download

1 10 5
2 50