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UITS Skillathon: Junior Programming Contest

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Challenges

**Current Rank: 7** [View your results](#) **Thank You**

Success Rate: 89.66% Max Score: 1

Try Again

Missing Number

Success Rate: 94.12% Max Score: 1

Try Again

Overhead Permutation

Success Rate: 100.00% Max Score: 1

Solve Challenge

Increasing

Success Rate: 42.86% Max Score: 1

Solve Challenge

Beautiful Number

Success Rate: 16.67% Max Score: 1

Try Again

Adrita's Distribution

Success Rate: 0.00% Max Score: 1

Solve Challenge

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Thank You

locked

Problem

Submissions

We are organizing a programming contest, and this time, we want to pay tribute to an exceptional individual: Mohammad Kaykobad Sir. Kaykobad Sir is a renowned Bangladeshi computer scientist, educator, author, and columnist. He has made significant contributions to computer science education and is one of the founders of the National Mathematics Olympiad in Bangladesh. Throughout his career, he has held prestigious academic positions, including being a professor at Bangladesh University of Engineering and Technology (BUET). He is currently a faculty member at BRAC University and the University of Information Technology and Sciences.

In honor of Kaykobad Sir's immense contributions, we want to acknowledge his impact on the field of computer science education.

Your task is simple:

You don't need any input. Just print "Mohammad Kaykobad Sir" as a token of respect and recognition for his achievements.

Input Format

No input is given for this task.

Output Format

Print exactly "Mohammad Kaykobad Sir" (without quotes) on a single line.

Sample Output 0

```
Mohammad Kaykobad Sir
```



Submissions: 29

Max Score: 1

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C++20



```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
```

```
9 int main() {  
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */  
11     return 0;  
12 }  
13
```

Line: 1 Col: 1

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Missing Number

locked

Problem

Submissions

Imran and Sifat are two brothers who want to buy a product. The price of the product is N . Imran has two notes, and Sifat has one note in his pocket.

Now, your task is to calculate how much more money they need in order to buy the product. You are given the amount of money they currently have and the price of the product.

Imran has two notes of value A and B in his pocket. Sifat has one note of value C in his pocket. The price of the product is N .

You need to find out how much more money they need to buy the product.

Input Format

The first line contains an integer N — the price of the product.

The second line contains three integers A , B , and C — the values of the notes that Imran and Sifat have.

Constraints

$$1 \leq A, B, C, N \leq 10^5$$

Output Format

Print a single integer representing how much more money they need in order to buy the product.

Sample Input 0

```
100
25 50 23
```

Sample Output 0

```
2
```



Submissions: 17

Max Score: 1

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C++20



```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
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9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13
```

Line: 1 Col: 1

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Overhead Permutation

 locked

Problem

Submissions

One day, Shahin and Habib were walking down a road, discussing interesting problems and algorithms. Shahin gave Habib a challenge: "I have a permutation of integers from 1 to N . Select any number an integer X from the array such that the maximum number of integers in the array that are divisible by a selected integer X , Can you solve it?"

Habib, confident in his skills, accepted the challenge and started thinking about how to solve it efficiently. Now, it's your turn to help Habib find the integer X that maximizes the number of divisible integers in the array.

A permutation of length N is an array consisting of N distinct integers from 1 to N in arbitrary order. For example, $[2, 4, 5, 1, 3]$ is a permutation, but $[2, 1, 3, 3]$ is not a permutation (3 appears twice in the array), again $[3, 1, 5]$ is not a permutation ($N=3$ but there is 5 in the array).

Input Format

The first line contains $t(1 \leq t \leq 10^5)$ number of test case. The next t line ccontains an integer $N(1 \leq N \leq 10^3)$ and an array of size N .

Output Format

For every test case, you need to print the number of integers in the array that are divisible by X .

Sample Input 0

```
2
5
2 4 5 1 3
3
2 3 1
```

Sample Output 0

```
5
3
```



Submissions: 3

Max Score: 1

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```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13
```

Line: 1 Col: 1

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Increasing

locked

Problem

Submissions

You are given an array `arr` of n positive integers. Determine if, by rearranging the elements, you can make the array strictly increasing. In other words, determine if it is possible to rearrange the elements such that $a_1 < a_2 < \dots < a_n$ holds.

Input Format

The first line contains a single integer N ($1 \leq N \leq 100$) — the length of the array.

The second line of each test case contains N integers a_i ($1 \leq a_i \leq 10^9$) — the elements of the array.

Output Format

Output "YES" (without quotes) if the array satisfies the condition, and "NO" (without quotes) otherwise.

Sample Input 0

```
3
3 2 1
```

Sample Output 0

```
YES
```



Submissions: 7

Max Score: 1

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C++20



```
1 #include <cmath>
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3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main(){
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
```



```
11     return 0;  
12 }  
13
```

Line: 1 Col: 1

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Beautiful Number

locked

Problem

Submissions

Jakaria and Heemel are student of University of information technology and Sciences (UITS), 53 Batch. Now, Heemel gives a task to Jakaria, Read an integer variable and print it in which the digits are separated into groups of three by commas.

Input Format

The input will contain an integer A ($0 \leq A < 2000000000$).

Output Format

Print the Beautiful number.

Sample Input 0

```
1171123
```

Sample Output 0

```
1,171,123
```



Submissions: 6

Max Score: 1

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C++20



```
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4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
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9 int main() {
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12 }
13
```

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Adrita's Distribution

 locked

Problem

Submissions

Adrita Ahsan, a brilliant female programmer from the Department of Computer Science and Engineering at UITS, is extremely proud of her two friends, Ali Ullah and Zihad Bepary, who, despite being relatively new to programming, recently triumphed in a major programming contest. To celebrate their victory, Adrita has decided to gift them chocolates as a token of appreciation.

Adrita has purchased **5** bags of chocolates, each containing a specific number of chocolates. She wishes to distribute the chocolates between Ali and Zihad in such a way that both of them receive an equal number of chocolates. However, there is a constraint: Adrita cannot split the chocolates in any bag. If she decides to give chocolates from a particular bag, she must give the entire content of that bag.

Your task is to determine whether it is possible for Adrita to distribute the chocolates between Ali and Zihad such that both receive exactly the same number of chocolates.

Input Format

The first line contains an integer $t (1 \leq t \leq 1000)$, the number of test cases. Each of the next t lines contains **5** integers b_1, b_2, b_3, b_4, b_5 ($1 \leq b_1, b_2, b_3, b_4, b_5 \leq 1000$), representing the number of chocolates in each of the **5** bags for a particular test case.

Output Format

For each test case, print "YES" if it is possible to distribute the chocolates equally between Ali and Zihad, otherwise print "NO".

Sample Input 0

```
3
2 3 1 1 3
5 3 1 2 1
2 2 2 2 2
```

Sample Output 0

```
YES
YES
NO
```

Explanation 0

- Adrita can give Zihad $b_1 + b_2 = 2 + 3 = 5$. Ali will get rest of them $b_3 + b_4 + b_5 = 1 + 1 + 3 = 5$. Thus, Ali and Zihad got same number of chocolates.
- Adrita can give Zihad $b_1 + b_3 = 5 + 1 = 6$. Ali will get rest of them $b_2 + b_4 + b_5 = 3 + 2 + 1 = 6$. Thus, Ali and Zihad got same number of chocolates.
- There's no way she can give Ali and Zihad same number of chocolates.

C++20



```
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4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
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8
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13
```

Line: 1 Col: 1

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Challenges



Current Rank: N/A

Thank You



Success Rate: 0.00% Max Score: 1 Difficulty: Medium

Solve Challenge

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Missing Number



Success Rate: 0.00% Max Score: 2 Difficulty: Medium

Solve Challenge

Message Center

Overhead Permutation



Success Rate: 0.00% Max Score: 2 Difficulty: Medium

Solve Challenge

Beautiful Number



Success Rate: 0.00% Max Score: 3 Difficulty: Medium

Solve Challenge

Increasing



Success Rate: 0.00% Max Score: 3 Difficulty: Medium

Solve Challenge

Adrita's Distribution



Success Rate: 0.00% Max Score: 4 Difficulty: Medium

Solve Challenge

Power of Age



Success Rate: 0.00% Max Score: 5 Difficulty: Medium

Solve Challenge

Power of Age

locked

Problem

Submissions

Leaderboard

Discussions

Tamim and Shafayet are good friends and they were talking about their ages. During the conversation, Shafayet came up with an interesting math idea. He asked Tamim, "Can you calculate my age raised to the power of your age?"

Shafayet's age is A and Tamim's age is B . Your task is to calculate A^B (Shafayet's age raised to the power of Tamim's age), and since the result can be very large, you need to print the answer modulo $10^9 + 7$.

Input Format

The first line contains two integers A and B ($1 \leq A, B \leq 50$).

Output Format

Print the value of A^B modulo $(10^9 + 7)$.

Sample Input 0

2 2

Sample Output 0

4



Submissions: 0

Max Score: 5

Difficulty: Medium

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C++20



```
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4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
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9 int main() {
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```



```
11     return 0;  
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13
```

Line: 1 Col: 1



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