

Largest dividing K

Given an integer array *nums* of size *N* and an integer *K*. Find the largest positive number less than or equal to 10^9 such that at least *K* numbers from the array *nums* are divisible by it.

Function description

Complete the *solve* function. This function takes the following 3 parameters and returns the required answer:

- *N*: Represents the size of array *nums*
- *K*: Represents the integer *K*
- *nums*: Represents the elements of array *nums*

Input format for custom testing

Note: Use this input format if you are testing against custom input or writing code in a language where we don't provide boilerplate code.

- The first line contains *T*, which represents the number of test cases.
- For each test case:
 - The first line contains *N* denoting the size of array *nums*.
 - The second line contains integer *K*.
 - The third line contains *N* space-separated integers of array *A*.

Output format

Note: Use this input format if you are testing sequence alignment logic or splitting code into functions where we don't provide boilerplate code.

- The first line contains T , which represents the number of test cases.
- For each test case:
 - The first line contains N denoting the size of array nums .
 - The second line contains integer K .
 - The third line contains N space-separated integers of array A .

Output format

For each test case in a new line, print the required answer.

Constraints

$$1 \leq T \leq 1000$$

$$1 \leq N \leq 10^5$$

$$1 \leq K \leq N$$

$$0 \leq \text{nums}_i \leq 10^6, 1 \leq i \leq N$$

$$\sum_{1 \leq i \leq T} N_i \leq 10^5$$

Sample input 



Sample output

Sample input

```
2  
5  
3  
12 16 32 2 45  
5  
3  
12 16 32 2 0
```

Sample output

```
4  
16
```

Explanation

The first line denotes $T=2$, denoting the number of test cases.

The first test case

Given

- $N = 5$
- $K = 3$
- $\text{nums} = [12, 16, 32, 2, 45]$

Approach

- The numbers 12, 16 and 32 are divisible by 4.
- It can be shown that no other higher number exists that can divide atleast 3 elements.

Thus the answer is 3.

The second test case

Given

- $N = 5$
- $K = 3$
- $\text{nums} = [12, 16, 32, 0]$

Approach

- The numbers 16, 32 and 0 are divisible by 16.
- It can be shown that no other higher number exists that can divide atleast 3 elements.

Thus the answer is 16

- ① The following test cases are the actual test cases of this question that may be used to evaluate your submission.

Sample input 1 

```
4  
4  
1  
1 1 1 0  
4  
2  
1 2 3 4  
4  
3  
27 6 63 81
```

Sample output 1 

```
1000000000  
2  
9  
4  
4
```

Sample input 2

```
S  
S  
1  
1 0 0 0 0  
5  
2  
1 2 4 8 16  
5  
3  
1 0 0 8 16
```

Sample output 2

```
1000000000  
8  
16  
2  
4
```

[View more](#)

Note:

Your code must be able to print the sample output from the provided sample input. However, your code is run against multiple hidden test cases. Therefore, your code must pass these hidden test cases to solve the problem statement.

Limits

Time Limit: 1.0 sec(s) for each input file

Memory Limit: 256 MB

Source Limit: 1024 KB

Scoring

Score is assigned if any testcase passes

Allowed Languages

Bash, C, C++14, C++17, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java 8, Java 14, JavaScript(Node.js), Julia, Kotlin, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, Racket, Ruby, Rust, Scala, Swift, TypeScript, Visual Basic

```
1 // Standard C++ library header
2 using namespace std;
3
4 // Function to solve the problem
5 int solve (int N, int K, vector<int> nums) {
6     // Logic to solve the problem
7     // ...
8     // ...
9     // ...
10    // Write your logic here
11    /*
12    */
13 }
14
15 // Main function
16 int main() {
```