Submissions

Minimum steps

Leaderboard

Discussions

Harsh has an integer A. He doesn't like this integer but he likes integer B. So he wishes to change it. He can perform following operations on A

1. Divide $oldsymbol{A}$ by any integer $oldsymbol{X}$

Problem

2. Multiply $m{A}$ by any integer $m{Y}$

Find the minimum number of steps required to change $m{A}$ to $m{B}$

Optional:

Upload your story after contest ends: Task screenshot of accepted green ticks. With these screenshot, when contest ends later you can post your story over Linkedin.

Compulsory hashtag to add is #23MayCodingContest. Use more appropriate hashtags that you want to add yourself on your Linkedin story.

Input Format

First line of the input contains $oldsymbol{T}$, the number of test cases

For each test case, there will be two integers in each line $m{A}$ and $m{B}$

Constraints

 $1 \le T \le 10^4$

 $1 \le A, B \le 10^9$

Output Format

For each test case print a single integer denoting the answer denoting the answer

Sample Input 0

3

4 6

2 6

15 10

Sample Output 0

2

1

2

Explanation 0

```
5/23/2020
                                     Minimum steps | All India Contest by Mission Helix Question | Contests | HackerRank
In test 1: First divide {\bf 4} by {\bf 2} and then multiply by {\bf 3}
In test 2: First multiply 2 by 3
 In test 3: First multiply 15 by 2 and then divide by 3
                                                                                                       f ⊌ in
                                                                                                      Contest ends in 11 minutes
                                                                                                      Submissions: 1437
                                                                                                      Max Score: 150
                                                                                                      Difficulty: Easy
                                                                                                      Rate This Challenge:
                                                                                                      More
   Current Buffer (saved locally, editable) & 40
                                                                                        Python 3
                                                                                                                            Ö
     1 ▼ for i in range(int(input())):
     2
             a,b = map(int,input().split())
             if((a*3) == b):
     3 ▼
                  print(1)
     4
             elif((a//2)*3 == b):
     5 ▼
     6
                  print(2)
             elif((a*2)//3 == b):
     7 🔻
                  print(2)
                                                                                                                    Line: 1 Col: 1
```

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All Contests > All India Contest by Mission Helix > Colony Unification

Colony Unification

Problem Submissions Leaderboard Discussions

There are N independent colonies who knew nothing about each other. But as the time moved on different colonies discovered each other and decided to merge other.

Let's say there are two colonies A and B, after discovering each other they become AB. From now on, whenever we talk about A or B it means AB only, in other words don't overthink about the name situation. It only means the larger colony into which a colony is merged into.

There are M instances when people from two colonies meet each other and join each other as well. Of course, if they are from same colony they don't join any further.

You have to tell the number of colonies after each instance.

Optional:

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Input Format

First line contains two integers N and M Next M lines contains two integers A and B, initial number of colonies of the two people who meet.

Constraints

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

$$1 \leq A, B \leq N$$

Output Format

For each instance, print the answer on a seperate line

Sample Input 0

- 5 4
- 1 2
- 2 3
- 2 4

Sample Output 0

- 4
- 3

3 2

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	nai	lau	OH	v

Initial state = 1, 2, 3, 4, 5

After Instance 1 = (1, 2), 3, 4, 5

After Instance 2 = (1, 2, 3), 4, 5

After Instance 3 = (1, 2, 3), 4, 5

After Instance 4 = (1, 2, 3, 4), 5

F ≱ in

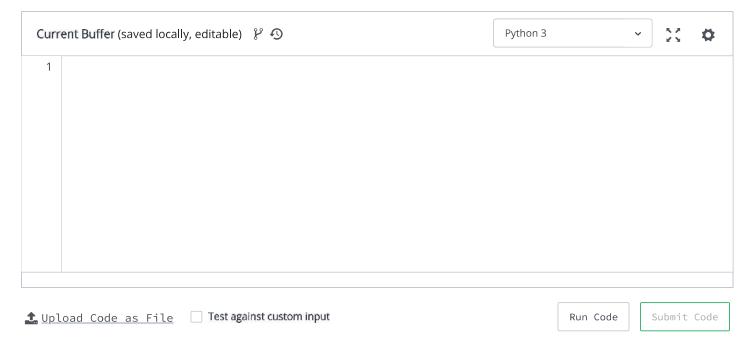
Contest ends in an hour

Submissions: 747 Max Score: 200 Difficulty: Easy

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All Contests > All India Contest by Mission Helix > 2-D binary

2-D binary

Problem

Submissions

Leaderboard

Discussions

You are given a $N \times N$ boolean matrix in which elements are initially set to false. You will be given Q queries.

There are 3 types of queries

Type 1: Print the sum of all elements of the matrix

Type 2: i, j: Invert the bit at position i, j

Type 3: i: Invert all the bits in row i

Optional:

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Input Format

First Line Contains ${f 2}$ integers, ${f N},{f Q}$

Next Q lines contains t, denoting the type of queries.

If query is of type $\mathbf{2}$, it will be followed by $\mathbf{2}$ more integers, \mathbf{i} , \mathbf{j}

If query is of type $\mathbf{3}$, it will be followed by $\mathbf{1}$ more integer, \boldsymbol{i}

Constraints

$$1 \le N \le 10^4$$

$$1 \le Q \le 10^6$$

$$1 \leq i, j \leq N$$

Output Format

For each query of type **1**, print the respective answer on a new line

Sample Input 0

- 3 5
- 2 2 3
- 3 1
- 2 3 3
- 1

Sample Output 0

0 5

Explanation 0

Initially

$$A = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}$$

After Query 2:

$$A = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{pmatrix}$$

After Query 3:

$$A = \begin{pmatrix} 1 & 1 & 1 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{pmatrix}$$

After Query 4:

$$A = \begin{pmatrix} 1 & 1 & 1 \\ 0 & 0 & 1 \\ 0 & 0 & 1 \end{pmatrix}$$

f ⊌ in

Contest ends in 35 minutes

Submissions: 399 Max Score: 250 Difficulty: Medium

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All Contests > All India Contest by Mission Helix > Oreo

Oreo

Problem

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Discussions

Question is simple. You have an array $m{A}$ of size $m{N}$, I will ask $m{Q}$ queries. You have to answer them.

About queries: You will given an integer X, you have to tell the probability of selecting an index i in the array such that

$$A_i|X=X$$

$$|=OR|$$

Since probability is in $rac{P}{Q}$ form, print the answer as $P imes Q^{-1}$ modulo 998244353, where Q^{-1} is Q modulo inverse 998244353

Tip for those who don't know how to calculate modulo inverse

Since the question is not about testing modular mathematics, I will tell how how to calculate $oldsymbol{Q^{-1}}$ modulo $oldsymbol{M}$

If M is prime then $Q^{-1} \mod M = Q^{M-2} \mod M$

And **998244353** is a prime number

Optional:

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Compulsory hashtag to add is #23MayCodingContest. Use more appropriate hashtags that you want to add yourself on your Linkedin story.

Input Format

First line will contain $oldsymbol{N}$ and $oldsymbol{Q}$

Next line will contain $oldsymbol{N}$ integers of the array

Next $oldsymbol{Q}$ lines will contain a single integer $oldsymbol{X}$

Constraints

$$1 \leq N, Q, A_i, X \leq 10^6$$

Output Format

For each query, print on seperate line, the answer to that query

Sample Input 0

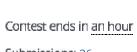
5 3 1 2 3 4 5 3 4 5

Sample Output 0

798595483 598946612 798595483

Explanation 0

- 1. x=3, there are 3 indices $\{1,2,3\}$ for which $A_i|x=x$, thus probability of choosing one of those indices is $\frac{3}{5}$ $mod\ M=798595483$
- 2. x=4, there is only 1 index $\{4\}$ for which $A_i|x=x$, thus probability of choosing one of those indices is $\frac{1}{5}$ mod~M=598946612
- 3. x=5, there are 3 indices $\{1,4,5\}$ for which $A_i|x=x$, thus probability of choosing one of those indices is $\frac{3}{5} \mod M = 798595483$



Submissions: 26 Max Score: 300 Difficulty: Medium

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