

Smallest Divisor

locked

Problem

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Your best friend Aayush is in trouble!

He had been slacking off in his online math classes recently and hence, he doesn't know about factors and divisibility.

Today in class, your strict maths professor Mr Mantra asks Aayush a question:

You are given 2 integers a and b . You need to find smallest positive integer d such that it divides a but does not divide b .

The values of a and b are such that it is guaranteed that there is at least one such d that divides a but not b .

Aayush, having not attended the classes properly, is stuck. The consequences of not giving the correct answer are severe. Can you help Aayush solve the problem by writing a program for the problem?

Input Format

A single line with 2 integers a and b separated by space in that order.

Constraints

$$1 \leq a \leq 10^5$$

$$1 \leq b \leq 10^5$$

Output Format

Give the smallest integer d that satisfies the given conditions [d divides a but does not divide b].

Sample Input 0

```
4 75
```

Sample Output 0

```
2
```

Explanation 0

1 divides both 4 and 75.

2 divides 4 but does not divide 75. Hence it is the minimum number that divides 4 but not 75.



Submissions: 46

Max Score: 125

Difficulty: Easy

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```
1 #include <iostream>
2 #include <cstdlib>
3 using namespace std;
4 int main()
5 {
6     int a,b,i,d;
7     cout << " ";
8     cin >> a >> b;
9     if(a % 2 == 0 && b % 2 != 0)
10    {
11        cout << 2;
12    }
13    else if(a % 3 == 0 && b % 3 != 0)
14    {
15        cout << 3;
16    }
17    else
18    {
19        for(i=4;i<max(a,b);i++)
20        {
21            if(i == 4)
22            {
23                d = a;
24            }
25            else if(a % i == 0 && b % i != 0)
26            {
27                if(i<d)
28                {
29                    d = i;
30                }
31            }
32        }
33        cout << d;
34    }
35 }
36
```

Line: 1 Col: 1

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