

Smallest Prime

DiPS CodeJam 22

Prompt

Given a 3×3 2D array of integers as input, return the smallest prime number in the array. Return **none** if there is no prime number.

Input Format

The input contains a 3×3 2D array of integers.

Output Format

Your output should be a single integer. If there are not prime numbers, print **none**.

Constraints

- $1 \geq n \geq 100$

Sample Input/Output

Input	Output
39 14 19 24 51 72 10 15 63	19

Solution

Let's take a look at the sample input:

```
39 14 19
24 51 72
10 15 63
```

First, let's filter out the primes:

51, 19

At this point, if we have no items in the array, we can print **none** and exit. Let's sort the array:

19, 51

The first element of the array is **19**. Thus, we can conclude that the smallest prime number in the input is 19.

Sample Program

```
# Helper
def isPrime(n):
    return n > 1 and all(n % i for i in range(2, int(n ** 0.5) + 1))

arr = []

# Take input
for _ in range(3):
    arr.append(list(map(int, input().rstrip().split())))

arrayOfPrimes = []
for subarray in arr:
    for n in subarray:
        if isPrime(n): arrayOfPrimes.append(n) # Add all primes to a list

if len(arrayOfPrimes) == 0:
    print("none")
else:
    min = arrayOfPrimes[0]
    for i in range(1, len(arrayOfPrimes)):
        if arrayOfPrimes[i] < min:
            min = arrayOfPrimes[i]
    print(min)
```