



STUDENT REPORT

DETAILS

Name

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EXPERIMENT

Title

SUM OF NUMBERS AT PRIME FACTORS

Description

Prime factors of a positive integer are the prime numbers that divide that integer exactly.

Given an array arr of n integers and a positive integer num.

Let's suppose prime factorization of num is: $p^a \times q^b \times r^c \times \dots \times z^f$, where p,q,r...z are prime numbers.

Sum of numbers in array arr at indices of prime factors of number num is: $a \times \text{arr}[p] + b \times \text{arr}[q] + c \times \text{arr}[r] + \dots + f \times \text{arr}[z]$.

You are given an array arr of size n and a positive integer num. You are required to calculate the sum of numbers in arr as mentioned above, and print the same.

Note:

- If arr is empty, print -1.
- If prime factor of num not found as indices, print 0.

Input Format:

The input consists of three lines:

- The first line contains an integer, i.e. n.
- The second line contains an array arr of length of n.
- The third line contains an integer num

The input will be read from the STDIN by the candidates.

Output Format:

Print the sum that was mentioned in the problem statement.

Example:

Input:

6

11 21 32 45 1 23

6

Output:

77

Explanation:

$$6=2^1 \times 3^1$$

$$\text{sum}=1*\text{arr}[2]+1*\text{arr}[3]=1*32+1*45=77$$

Source Code:

```
def prime_factors(num):
    factors={}
    d=2
    while num>=2:
        while(num %d)==0:
            if d in factors:
                factors[d]+=1
            else:
                factors[d]=1
            num//=d
        d+=1
    return factors
def calculate_sum(arr,num):
    factors=prime_factors(num)
    total_sum=0
    n=len(arr)
    for prime,exponent in factors.items():
        if prime
```

RESULT

0 / 5 Test Cases Passed | 0 %