STUDENT REPORT

DETAILS

Name

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Roll Number

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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: $p^a \times q^b \times r^c \times .... \times z^f$,where p,q,r...z are prime numbers.

Sum of numbers in array arr at indices of prime factors of number num is: a x arr[p] + b x arr[q] + c x arr[r] +..... + f x 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:

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

sum=1*arr[2]+1*arr[3]=1*32+1*45=77

Source Code:

```
import math
def isPrime(n):
    if n <= 1:
        return False
    for i in range(2, int(math.sqrt(n)) + 1):
        if n % i == 0:
            return False
    return True
N = int(input())
if N == 0:
    print(-1)
    exit()
A = list(map(int, input().strip().split()))[:N]
P = int(input())
numsP = {}
for i in range(2, P + 1):
    while isPrime(i) and P % i == 0:
       if i in numsP:
           numsP[i] += 1
       else:
            numsP[i] = 1
       P //= i
answer = 0
for key, value in numsP.items():
    if key < N:
        answer += value * A[key]
    else:
        answer = 0
        break
print(answer)
```

RESULT

5 / 5 Test Cases Passed | 100 %