



# STUDENT REPORT

## DETAILS

### Name

Mohammed Aakhil R

### Roll Number

22BI24EE410-T

## EXPERIMENT

### Title

#### NUMBER OF COMBINATIONS LEADING TO A PRODUCT

### Description

Problem Statement:

You are given an array `arr` and a product `m`. Your task is to find the number of possible unique triplets whose product of elements is `m`.

Input Format:

- The first line contains the integer, `n`
- The second line contains space separated integers of the array, `arr`
- The third line contains the product `m`.

The input will be read from the STDIN by the candidate

Output Format:

The output consists of a single integer, i.e. the count of unique triplets having product `m`.

The output will be matched to the candidate's output printed on the STDOUT

Example:

Input:

7

5 3 20 10 1 4 2

60

Output:

3

Explanation:

Product `m`:60

Possible triplets for product `m`: (5,4,3),(20,3,1), (10,3,2)

The count of unique triplets is 3.

### Source Code:

```
def count_unique_triplets(arr, m):
    n = len(arr)
    unique_triplets = set()

    # Iterate through all combinations of triplets
    for i in range(n):
        for j in range(i + 1, n):
            for k in range(j + 1, n):
                product = arr[i] * arr[j] * arr[k]
                if product == m:
                    # Store the triplet in a sorted tuple to ensure uniqueness
                    triplet = tuple(sorted((arr[i], arr[j], arr[k])))
                    unique_triplets.add(triplet)

    return len(unique_triplets)

# Read inputs
n = int(input().strip())
arr = list(map(int, input().strip().split()))
m = int(input().strip())

# Calculate and print the count of unique triplets
result = count_unique_triplets(arr, m)
print(result)
```

## RESULT

6 / 6 Test Cases Passed | 100 %