



Fibonacci pairs

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Problem

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Pruthvi Loves solving complex math equations , he was challenged by his friend to solve an unusual equation,

$$S = \sum_{1 \leq i < j \leq N} GCD(Fib(A_i^K), Fib(A_j^K))$$

Where, **A** is an array and A_i is the i th element of the array. And k is a random number given by his friend.

Fib (i) is the Fibonacci sequence such that $Fib(0) = 0$, $Fib(1) = 1$ and $Fib(i) = Fib(i-1) + Fib(i-2)$ for $i \geq 2$.

GCD (x,y) represents the greatest common divisor of x and y .

Since the answer **S** can be very large, find the modulo 1000000007. Help Pruthvi find the answer and tell his friend who is the real artist.

Input Format

First line of input contains two space separated integers N and K .

Second line of input contains N space separated integers A_i .

Constraints

- $0 < N \leq 100000$
- $0 < K \leq 10^{15}$
- $0 < A_i \leq 1000000$

Output Format

Single integer denoting the value of **S** modulo 1000000007.

Sample Input 0

```
5 1
2 4 2 1 4
```

Sample Output 0

```
12
```

Explanation 0



solving the equation of **S** we get $S = 12$ for the above array of N numbers.




Submissions: 14

Max Score: 20

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C   

```
1 #include <stdio.h>
2 #include <string.h>
3 #include <math.h>
4 #include <stdlib.h>
5
6 int main() {
7
8     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
9     return 0;
10 }
```

Line: 1 Col: 1

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