

Fibonacci and Easy GCD

The Little Detective and the Kid are tired of fighting with each other, so they try to find the winner by a simple problem.

Kid gives the Detective an array **A** of size **N** and challenges him to find the following sum :

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

Where

Fib (i) is the famous 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 can be very large, Kid asks Little Detective to find it modulo 1000000007. Help Detective find the answer and tell Kid who is the real artist.

Input :

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

Second line of input contains **N** space separated integers **A_i**.

Output :

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

Constraints :

$$0 < N \leq 100000$$

$$0 < K \leq 10^{15}$$

$$0 < A_i \leq 1000000$$

Example

Input:

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

Output:

```
12
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