Sliding Window Range GCD

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 mebibytes

Bob has an array a of size n consisting of positive integer values in range $1 \leq a_i \leq 10^6$. He wants to take all possible subarrays of size m in it, find the greatest common divisor of numbers in each subarray, and find their sum. But his array is too big, so he needs help. Find the sum for him.

Recall that a subarray is a consecutive range of an array. And the greatest common divisor of a set of numbers is, well, the biggest number that divides each number in the set.

Input

The first line contains two positive integers n, m denoting the size of the array and the size of the subarray.

The second line contains n space separated positive integers denoting the elements $a_1, a_2, ..., a_n$ of the array.

Output

On a single line, print the sum of greatest common divisors of all possible subarrays of size m in the array.

Scoring

- Subtask 1 (19 points): $n = m = 2$.
- Subtask 2 (32 points): $1 \leq m \leq n \leq 1000$.
- Subtask 3 (49 points): $1 \leq m \leq n \leq 500000$.

Example

standard input	standard output
2 2 12 18	6
3 2 6 10 15	7

Explanation

- In the first test, there are two numbers and we need to find the greatest common divisor of them. So the answer is simply $\gcd(12, 18) = 6$.
- In the second test, we need the sum of all length 2 subarrays of the given array. So our answer is $\gcd(6, 10) + \gcd(10, 15) = 2 + 5 = 7$.