

# Rouge Genie

Time limit: 5s

Everyone knows about the fairy tale version of Aladdin and the magic lamp story. In reality, the situation is not so smooth. Here is the real story. Aladdin tricked the genie (We cannot discuss how). Though the genie didn't let anyone know how upset he was, he came up with a solid plan to make Aladdin pay. The genie always knew about Aladdin's greed for conquering the world. He knew that at some point Aladdin would ask "Genie, give me a sequence of the kingdoms to conquer".

Genie knows that every kingdom has some unique types of troops and together they become the strength of the kingdom in a war. Any unique type of troop is represented by a number which can not be divided by any other number than 1 and itself (simply a prime number). If we multiply them all we get the strength of that kingdom. So if a kingdom has **12** strength it has the troops **2\*2\*3** which means there are **2** types of troops (simply number of unique prime factors). Genie knows that Aladdin would like to ensure two things while choosing two consecutive kingdoms,

- a. The strength difference has to be at least **M**
- b. Number of types of troops need to be different

Now, the genie's evil plan is that from the sequence of kingdoms **S**, he will give Aladdin the longest subsequence **LS** where the above two conditions are met. As you can see the strengths of the sequence **LS** don't need to be strictly increasing which Aladdin assumed will be. That's the revenge.

The first line will contain two space-separated numbers **N** (number of kingdoms) and **M**, the second line will contain **N** space-separated strength values **S[i]** for each kingdom, **S[i]** means the strength of *i*'th kingdom. Print the longest possible length of the sequence **LS**.

$1 \leq N \leq 10^5$

$1 \leq M \leq 5 * 10^9$

$2 \leq S[i] \leq 5 * 10^9$

All are integer numbers.

Sample Input:

5 4

3 6 3 12 2

Sample Output:

