

Bohdan against "tails"

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

Having seen Sasha's skill in solving "tails Bohdanchik also decided to settle all his debts in mathematics.

In total, he has n tasks, each of which has a specific topic denoted by the number a_i .

Because some topics are repeated, Bohdanchik solves them faster, namely:

- If Bohdanchik solves a task of a certain topic for the first time, he uses x minutes of time.
- If he solves it not for the first time and the last time he solved this topic he spent q minutes, then this time he will spend $\max(\lfloor \frac{q}{2} \rfloor, 1)$ minutes.

Find the total time in minutes that he will spend solving the homework.

In the notation, $\lfloor X \rfloor$ means rounding down (to the nearest integer), for example, $\lfloor 3.14 \rfloor = 3$, $\lfloor 3.9 \rfloor = 3$.

Input

The first line contains two integers n and x ($1 \leq n \leq 10^5$, $1 \leq x \leq 10^9$) — the number of math tasks and how long Bohdanchik solves the homework of a certain topic for the first time.

The second line contains n numbers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$) — the topic of the i -th task.

Output

Output a single number — the number of minutes needed for Bohdanchik to solve all the tasks.

Scoring

In this problem, there are conditional blocks. If your solution works correctly for certain constraints, it will receive a certain number of points. Note that each test is graded individually.

1. (5 points): $x = 1$;
2. (15 points): $n \leq 1000$;
3. (15 points): $a_i \leq n$;
4. (15 points): $a_1 = a_2 = \dots = a_n$;
5. (50 points): without additional constraints.

Examples

standard input	standard output
2 2 1 2	4
3 4 2 2 2	7

Note

In the first test, he will complete the task with topic 1 in 2 minutes, and the task with topic 2 in 2 minutes, spending a total of 4 minutes.

In the second test, when solving the task with topic 2 for the first time, he will spend 4 minutes, when solving it again, he will spend $\max(\lfloor \frac{4}{2} \rfloor, 1) = 2$ minutes, and when solving the task with topic 2 for the third time, he will spend $\max(\lfloor \frac{2}{2} \rfloor, 1) = 1$ minute, so in total he will spend $4 + 2 + 1 = 7$ minutes.