Keyi LIkes Reading

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

Keyi has a strong passion for reading, and she has developed a habit of morning reading every day.

With the college entrance exam approaching, Keyi plans to learn several words from the 'Victor Dictionary' each morning.

However, her method of memorizing words is a bit peculiar. If she learns a word of length k today, she insists on memorizing **all** the words in the dictionary that have the same length of k.

But Keyi's daily energy is limited, and she cannot learn more than W words in a day, or else she won't be able to remember them all.

Keyi is unsure how to efficiently plan which words to study each morning, so that it can minimize the number of days it will take her to complete the entire 'Victor Dictionary'. Therefore, she kindly requests your assistance.

Input

The first line contains two integers, n and W ($1 \leq W \leq n \leq 50000$).

The second line contains n integers a_i ($1 \leq a_i \leq 13$) - a_i denotes the length of the i ($1 \leq i \leq n$)-th word.

It's guaranteed that for all words of the same length, they will not occur more than W times.

Output

Output the minimum number of days it takes to learn the entire "Victor Dictionary."

Example

standard input	standard output
5 4 1 2 1 2 1	2