

Dung Beetle Balls

Winter Workshops, Day 3, Available memory 64 MB

02.01.2020 - 08.01.2020

Dung beetles are beetles that feed on feces (dung). Many dung beetles, known as rollers, roll dung into round balls, which are used as food source or breeding chambers.

In this problem, a fellow dung beetle is rolling dung to make breeding chambers. The beetle has n places with dung available, each one with q_i units of dung. The beetle can move to any of these locations, form a ball with the dung being there and roll it back to where it will be stored. However, the beetle cannot use dung from two different places to build one ball, because they're too far away from each other.

The beetle would like to form as many balls as possible. This might not be easy, as all of them should be of the same size and not smaller than k units of dung. The beetle has concluded that he can form b balls of size k , but is not yet satisfied with the result. Help him! Given the quantities of dung in each location, and the minimum required size of a single ball, your task is to compute the largest m such that the beetle can still form b balls of size m .



Figure 1: A dung beetle rolling a dung ball.

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq k \leq 10^6$
- $1 \leq q_i \leq 10^9$.

Input

$n \ k$ $q_1 \ q_2 \ q_3 \ \dots \ q_n$
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Output

Print m , the maximum size of a ball such that the beetle can form b equal balls of size m .

Example

Input	Output
1 10 14	14
1 10 100	10
4 5 8 7 14 14	7
10 8 3 11 30 12 15 23 11 5 31 21	10

Scoring

Subtask	Constraints	Points
1	$n \leq 100$	50
2	no additional constraints	50