Problem 0: Climbing the Corporate Ladder [HackerRank]

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After you helped your previous boss overcome his technical woes (see here if you don't know/remember what we're talking about), you've been courting a lot of interest from people higher up the corporate ladder.

One day, you are summoned into the office of the COO — a Harvard alumna — and she presents you with her conundrum. She has a list of n workers, who have different productivities. She says she's recently secured a supply of machines, each of productivity m. She wants to know the maximum increase in productivity possible if she chooses to fire some subset of her employees and replaces them with machines. She goes on about how interesting this problem sounds because there are "exponentially" many subsets of workers that she could fire, and we would have to "optimize" across all of these subsets, which is "infeasible." (You, of course, know that she is doing her best to throw around buzzwords from the one CS course she had to take in college.)

Input

The first line contains two space-separated positive integers n and m (in that order), which represent the number of workers she has, as well as the productivity of a machine. The next line contains n space-separated integers that represent the productivities of each of her workers.

Output

The output should consist of one integer: the maximum possible *increase* in productivity that can be attained by firing some subset of her workers and replacing them with machines. (Note a worker can only be replaced by a single machine.)

Constraints

You can assume that $1 \leq n \leq 5 \cdot 10^5$, and both m and all the productivities will be in the range $[1, 10^4]$.

Example

Input:

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5 10
7 8 20 13 3
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Output:

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12
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Explanation: The total productivity of the workers is $7 + 8 + 20 + 13 + 3 = 51$. The best she can possible do is to fire the first worker, the second worker, and the fifth worker, because upon replacing them with machines the total productivity increases to $10 + 10 + 20 + 13 + 10 = 63$.