Greedy Santa (christmas)

Santa Claus loves everything about his job: the sled, the reindeers, the chilly weather, the smiles of children when they receive their gifts... everything except one thing: he really hates his managers.

As a matter of fact, the *North Pole Holdings LLC* is a very demanding company, and its top executives are arrogant and hard to please. Every year Santa tries his best to spend as little as possible to buy the gifts, be as fast as possible to deliver them in time, and yet there is always some manager complaining!

That is why, this year, Santa feels a little "vindictive": he will buy very expensive gifts (for example, he's thinking about buying a vacation to Hawaii as a gift for himself) in order to squander **all of the budget** provided by the company, a total of B euros.

Figure 1: Santa Claus, enjoying his vacation paid for by the company.

Santa wants to use all of the company's budget **even if that means having to pay something out of his own pockets!** In other words, he wants to choose a subset of the available gifts that *maximizes* money spent from the budget while *minimizing* the amount of money he has to spend out of his pockets.

Help Santa by computing the total cost of the gifts!

> ☞ Among the attachments of this task you may find a template file `christmas.*` with a sample incomplete implementation.

Input

The first line contains two integers N and B, respectively the number of available gifts and the budget set up by Santa's managers. The second line contains N integers G_i, where the i-th integer represents the cost of the i-th gift.

Output

You need to write a single line with an integer: the total cost of some subset of the gifts such that the budget is used as much as possible while minimizing what Santa will have to pay by himself.

Constraints

- $1 \leq N \leq 100$.
- $1 \leq B \leq 4000$.
- $1 \leq G_i \leq 100$ for each $i = 0 \ldots N-1$.
- The budget is always sufficient to buy at least one of the gifts.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (30 points) The cost of all the gifts is either 1 or 2.

– **Subtask 3** (50 points) $N \leq 20$.

– **Subtask 4** (20 points) No additional limitations.

Examples

input	output
5 30 13 7 21 8 14	34
10 10 1 2 1 1 2 1 1 1 2 1	10
5 100 10 11 12 13 14	60

Explanation

In the **first sample case**, Santa could choose to buy the gifts with prices 7, 8 and 14 for a total of 29 euros, but that would not use all of the budget. The cheapest way to use as much of the budget as possible is to buy gifts 13 and 21, for a total of 34 euros. Santa will need to pay 4 euros out of his pockets.

In the **second sample case**, it might seem like a good solution to buy all the 1s (thus reaching 7) then buy a 2 (reaching 9) and finishing off with another 2, reaching 11 euros. However, it's smarter to buy all of the 2s first (thus reaching 6) and then buy the 1s until reaching exactly 10 euros.

In the **third sample case** there is sadly no way to use all of the budget.