A. Sotwik and Candies !!

1 second, 256 megabytes

Sotwik is planning to go on a date and what's better than taking some candies for his date?

He knows n stores and each of them has a_i amount of candies. Now he wants to take as many candies as he wants but he also wants the candies to be **even** so that he can divide them equally and give equal half to his date!

Given an array, print the maximum number of candies that he can take. Note that he can choose to take any amount of candies from the i_{th} store but note more than a_i.

Input
The first line will contain N and then the next line will contain N non negative integers space separated.

$1 \leq N \leq 10^5$

$1 \leq a_i \leq 10^3$

Output
Print the maximum number of candies that Sotwik can take.

input
5 1 2 3 4 5
output
14

input
5 2 4 2 1 3
output
12

B. Pr0tick goes Home

1 second, 256 megabytes

Pr0tick is sick of living in the hostel and wants to return home quickly. The city where Pr0tick lives can be represented in the form of a two dimensional matrix M. The hostel is located at the cell $(1, 1)$ and Pr0tick's home is at the cell (n, m). Pr0tick can only travel towards the right (i.e., from (x, y) to $(x, y + 1)$) and in the downward direction (i.e., from (x, y) to $(x + 1, y)$). There are some cells which Pr0tick considers unlucky and won't visit. On the other hand, there is a candy shop located at (x, y) which Pr0tick likes and calls a special point, and will only go home if he gets to visit the shop. Help Pr0tick in finding the number of paths to his home. Two paths are considered different if there is at least one cell that is not common to the two paths.

Input
The first line contains four integers n, m, x, y, where n and m are the number of rows and number of columns respectively and x, y is the special point. $(1 \leq n, m \leq 15, 1 \leq x \leq n, 1 \leq y \leq m, M_{x,y} = 1)$.

Next, there will be n lines, each containing m space separated integers representing the elements of M. A coordinate can only be visited if the associated integer is 1, i.e., $M_{i,j} = 1$.

Output
Output a single integer denoting the number of paths.

input
3 3 2 2 1 0 1 1 1 1 1 1 1
output
2

C. Vacation

1 second, 256 megabytes

Taro's summer vacation starts tomorrow, and he has decided to make plans for it now. The vacation consists of N days. For each i $(1 \leq i \leq N)$, Taro will choose one of the following activities and do it on the i^{th} day:

- A: Swim in the sea. Gain a_i points of happiness.
- B: Catch bugs in the mountains. Gain b_i points of happiness.
- C: Do homework at home. Gain c_i points of happiness.

As Taro gets bored easily, he cannot do the same activities for two or more consecutive days. Find the maximum possible total points of happiness that Taro gains.

Input
The first line contains single integer **N**, denoting the number of vacation days. Each of the next **N** lines contains three integers a_i, b_i and c_i .

Constraints: $1 \leq N \leq 20, 1 \leq a_i, b_i, c_i \leq 10^4$

Output
Print the maximum possible total points of happiness that Taro gains.

input
1 100 10 1
output
100

input
2 10 5 1 3 6 8
output
18

For testcase 2:

If Taro does activities in the order A, C, he will gain $10 + 8 = 18$ points of happiness.