

# Candy (Again)

You and a friend have a big bag of candy. You want to keep slim and trim, and so you would like to equalize the candy which you are sharing with your friend in terms of calorie count. That is, your task is to divide the candies into two groups such that the number of calories in each group is as close together as possible.

## Input

The first line of input contains the number of different kinds of candy you have in your bag of candy  $N$  ( $1 \leq N \leq 100$ ). On the following  $N$  lines, there are pairs of numbers describing each type of candy. The candy description is of the form  $k_i c_i$  where  $k_i$  is the number of that particular type of candy contained in the bag and  $c_i$  is the calorie count for each piece of that type of candy. You may assume that  $1 \leq k_i \leq 500$  and  $1 \leq c_i \leq 200$ .

## Output

Your output is one integer which is the minimum difference of calories between friends

## Example

**Input:**

```
4
3 5
3 3
1 2
3 100
```

**Output:**

```
74
```