Bloomberg CODECON

Memory Limit: 1350 MB
Time Limit: 5 s

Win the Election (600 points)

Introduction

You are the campaign manager of a presidential candidate, and with election day looming, you need to figure out how to win. In this election, there are two candidates, **Us** and **Them**. Votes are tallied for each state in the nation, and the winner of each state gets all the delegates belonging to that state. To win the election, a candidate must win *more than half* the total available delegates.
Due to aggressive polling, you know the percentage of voters in each state that are voting for **Us**, and the percentage that are voting for **Them**. The remaining voters are **undecided** and will not vote on election day. You can, however, spend money to "convince" voters to vote for **Us** (through ads, intimidation, voter fraud, whatever it takes!). It costs **$1 million** to convince 1% of **undecided** voters in a state to vote for **Us**, and **$3 million** to convince 1% of **Them**-voters to changes sides.
What is the minimum amount of money that it will cost for **Us** to win the election?

Input Specifications

The first line of the input will be an integer $1 \leq S \leq 50$, representing the number of states in the nation. Each subsequent line will provide each state's name *(state names will not have spaces in them)*, the percent voting for **Us**, the percent voting for **Them**, and its number of delegates, space delimited.

Output Specifications

The output is a single integer, giving the minimum cost to win the eleciton in millions

Sample Input/Output

Input

```
2
Pennsylvania 30 55 20
Florida 47 51 29
```

Output

```
7
```

Explanation

We are losing both states, but Florida has more delegates, so we need to buy their votes to win. We'll need 2% of voters to switch sides, which costs $6 million, then buy 1% of undecided voters for an additional $1 million, bringing the score to 50% for Us and 49% for Them. In total, it costs $7 million to win Florida, and the election.

Input

```
5
Maine 0 100 8
Massachusetts 40 49 10
```

```
NewHampshire 47 49 3
RhodeIsland 48 49 2
Vermont 48 49 2
```

Output

```
13
```

Explanation

Trying to win Maine will be expensive, so we need Massachusetts ($10 million) and either NewHampshire ($3 million), or both RhodeIsland and Vermont ($2 million each) to overcome the remaining delegates. Its cheaper to buy NewHampshire, so our total comes to $13 million.

Input

```
1
Hawaii 100 0 1
```

Output

```
0
```

Explanation

Already won, no money need be spent!