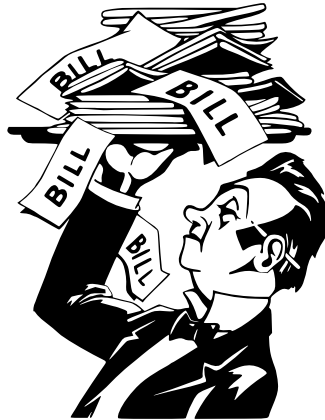# B: Check the Check

As a tourist in Paris, you were told you should always carefully check the itemized bill (also called *check*) that is presented to you at the end of a meal with the list of what you ordered and the total price. Indeed, it is not uncommon for these bills to be handwritten, and for the total to be computed by hand by the waiter. You definitely do not want to overpay for your meal, and will protest if there is a mistake in the restaurant's favor. However, if the restaurant gives you a discount, you will not complain about it.

Write a program that decides whether you should pay the total amount presented on the check, or protest about the check.

Input

The input is formed of $2n + 2$ lines:
- lines $2k + 1$ for $0 \leqslant k \leqslant n - 1$ consist of the name of the ordered dish d_k;
- lines $2k + 2$ for $0 \leqslant k \leqslant n - 1$ consist of the integer price p_k of d_k in euros, and the number c_k of orders for d_k, separated by a space;
- line $2n + 1$ consists of the word "TOTAL";
- line $2n + 2$ consists of the integer total T in euros computed by the waiter.

Limits

- For every $0 \leqslant k \leqslant n - 1$:
  - d_k has at most 1 000 characters, and is never equal to "TOTAL";
  - $0 \leqslant p_k \leqslant 1\,000$;
  - $0 \leqslant c_k \leqslant 10$;
- $0 \leqslant n \leqslant 100\,000$;
- $T \leqslant 2\,000\,000\,000$.

Output

The output should consist of a single line, whose content is either "PAY" (if the displayed total is less than or equal to the actual total) or "PROTEST" (otherwise).

Sample Input

```
Foie gras
15 2
Huîtres
10 1
Bœuf bourguignon
18 1
Magret de canard
17 1
Lapin à la moutarde
16 1
Crème brûlée
6 1
Mousse au chocolat
5 2
TOTAL
100
```

Sample Output

```
PAY
```

Sample Input

```
Escargots de Bourgogne
15 2
Pâté en croûte
10 1
Blanquette de veau
18 1
Gratin dauphinois
17 1
Ratatouille
16 1
Profiteroles
6 1
Crêpe au sucre
5 2
TOTAL
108
```

Sample Output

```
PROTEST
```