

# ECOO '17 R1 P1 - Munch 'n' Brunch

**Time Limit:** 30.0s    **Memory Limit:** 64M

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Student council is looking to organize a school brunch, where the proceeds will be put towards a year-end trip for the graduating class. The council members decide that the price depends on how many years you have been at the school. For someone who has been at the school for one year ( $Y_1$ ), the price will be \$12, for someone who has been at the school for two years ( $Y_2$ ), the price will be \$10, the three-year ( $Y_3$ ) price will be \$7, and the price for someone who has been there all four years ( $Y_4$ ) will be \$5.

Out of all the proceeds, 50% can be saved towards the year-end trip, as the other 50% is spent on the various costs to run the brunch. Given the following input data, calculate whether or not the council will need to raise additional funds.

## Input Specification

The input contains 10 trips, at 3 lines of data per trip.

- For each of the trips, the first line will show the cost of the trip as an integer (\$50 to \$50 000).
- The next line contains four floating point numbers  $Y_1, Y_2, Y_3, Y_4$  ( $0 \leq Y_1, Y_2, Y_3, Y_4 \leq 1$  and  $Y_1 + Y_2 + Y_3 + Y_4 = 1$ ) representing the percentages of the total number of students from years 1 through 4 respectively.
- The third line contains a single number  $N$ , which contains the total number of students attending the brunch ( $4 \leq N \leq 2000$ ).

*Note:* You cannot have less than a whole person (e.g., 1.8 people is the same as 1 person). Any missing or extra people should be removed from or added to the group with the highest percentage of attendees. There will always be exactly one group with the highest percentage of attendees.

## Output Specification

Output ☐ YES if the student council needs to find other funding, and ☐ NO if the council has raised sufficient funds.

## Sample Input

```
4000
0.5 0.2 0.1 0.2
400
6000
0.1 0.1 0.45 0.35
2000
```

## Sample Output

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YES  
NO

Note: Only 2 cases are shown in this sample.

Educational Computing Organization of Ontario - statements, test data and other materials can be found at [ecoocs.org](http://ecoocs.org)

# ECOO '20 P2 - Online Shopping

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**Time Limit:** 20.0s    **Memory Limit:** 256M

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Like many others, Mimi has spent the last month practicing social distancing. As part of her efforts, she has started shopping entirely online. She's found that online shopping offers a lot of advantages. In particular, you can easily look at many different websites in order to find the best price for an item.

However, others have also started shopping online, which means that stores are running out of inventory. As a result, Mimi often has to order from multiple websites in order to get all the items that she wants.

Mimi has a number of items that she has to buy. Can you help Mimi determine the minimum amount of money that she needs to spend to buy all the items?

## Input Specification

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The first line begins with a single integer  $T$  ( $1 \leq T \leq 10$ ), the number of test cases.  $T$  test cases follow.

Each test case begins with one integer  $N$  ( $1 \leq N \leq 100$ ), the number of stores.  $N$  store descriptions follow. Each store description begins with an integer  $M$  ( $1 \leq M \leq 100$ ), the number of different items sold at each store. The next  $M$  lines each contain a lower-case string  $S$  and two integers  $P, Q$  ( $1 \leq P, Q \leq 100$ ): the name of an item, its price, and the quantity that the store has in stock. Each item's name will be unique, and contain at most 50 characters.

The next line contains an integer  $K$  ( $1 \leq K \leq 100$ ), the number of different items that Mimi would like to buy. The next  $K$  lines each contain an item name  $S$  and an integer  $D$  ( $1 \leq D \leq 100$ ), the amount of that item that Mimi would like to buy. Each item's name will only appear at most once.

It is guaranteed that, unlike the real world, the total quantity of each item available in stores is greater than or equal to the quantity that Mimi would like to buy.

## Output Specification

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For each test case, print a single integer: the minimum amount that Mimi needs to spend to buy all the items that she wants.

## Sample Input

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```
1
2
2
toiletpaper 1 50
catnip 2 25
1
toiletpaper 100 1
2
toiletpaper 51
catnip 10
```

## Sample Output

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```
170
```

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