A robotic barman (bar-bot) is loaded with a number of basic ingredients used for mixing cocktails. The machine mixes cocktails according to a predefined recipe, using existing basic ingredients. A cocktail can be made of one or several basic ingredients; the cocktail recipe is given in product units (units, in short) (example: Bloody Mary = 1unit Vodka, 4 units tomato juice, 1 unit pepper, 1 unit ice). A cocktail request can be fulfilled if and only if the bar-bot is loaded with all the necessary basic ingredients in the necessary quantities. The bar-bot is resupplied by adding a fixed set of 15 units to all basic ingredients it contains. The storage capacity of the bar-bot is large enough such that there is no upper limit for the stock of basic ingredients.

Requirement

Given the number of basic ingredients and their initial stock (expressed in units) and then a list of cocktail requirements and re-supplies, one must find how many cocktail requests have been solved and how many re-supplies have been made.

Input data

One will read from the keyboard (the stdin stream) the following data: on the first line the number of basic ingredients that the Barbot contains, as an integer N, then, on the next line, the initial stock of basic ingredients, expressed as units, then, on the next line, an integer number n representing the number of cocktails requests and re-supplies. On the following n lines, one will read the information about each cocktail request or resupply in the following format:

```
<request-ingredient-1> <request-ingredient-2> ... <request-ingredient-n>
```

The data in the format above are separated by a blank space; each line ends with a newline (‘\n’) character. A re-supply is defined by all values to be zero (the resupply means, as previously stated, adding exactly 15 units from each basic ingredient to the bar-bot stock). A cocktail request is defined by at least one non-zero value, representing the number of units from the specific basic ingredients that are to be mixed.

Output data

The program will display on screen (the standard output stream) on two successive lines (each line is ended by a newline (‘\n’) character), the number of cocktail requests that have been mixed successfully and, respectively, the number of re-supplies.

ATTENTION to the compliance to the problem requirements: the display of results must be done EXACTLY as required! In other words, on the standard output stream there will be nothing displayed in addition to the problem requirements; following the automatic evaluation, any supplemental character displayed, or any display different than the requirements, will produce an eroneous result and will lead to the „Reject” of the solution.

Restrictions and remarks

1. 0 <**N**<= 20, 0 <**n**<= 100
2. **Warning:** Any input line can have whitespaces (blanks or tab characters) at the start or before the newline character.
3. **Warning:** According to the chosen programming language, the file containing the code must have one of the extensions .c, .cpp, .java, .py, or .m. The web editor does not add automatically these extensions and the lack of the extensions leads to the impossibility of program compilation!

4. **Warning**: It is recommended for those programming in Matlab that the source file be named <name>.m where <name> is the family name (last name) of the candidate.

Examples

Input	Output	Explanations
4 5 14 3 2 5 2 2 2 2 1 0 0 1 0 0 0 0 0 1 0 3 0 0 0 0	2 2	The bar-bot has 4 basic ingredients; the initial stock is: 5 units ingredient type 1, 14 units ingredient type 2, 3 units ingredient type 3, 2 units ingredient type 4. At the bar-bot one makes 5 operations. The first operation is a cocktail request requiring 2 units from each ingredient; this cocktail can be made; after making the cocktails the ingredient stock becomes 3 12 1 0. The second operation is a cocktail request that cannot be made - at necessary ingredient 4 the stock is zero. The third operation is a re-supply that adds 15 units to each basic ingredient. The fourth operation is a cocktail request that can be mad (the stock is sufficient). The fifth operation is a re-supply. Thus, they are 2 cocktails made and 2 re-supplies.
3 1 0 55 2 0 0 0 0 0 0	0 2	The bar-bot has 3 basic ingredients; the initial stock is: 1 unit ingredient type 1, 0 units ingredient type 2, 55 units ingredient type 3. At the bar-bot one makes 2 operations, both being re-supplies. As such, there are no cocktails that were not served and there were 2 re-supplies.
5 0 5 2 15 2 4 0 1 0 0 1 0 1 1 0 0 0 0 0 5 0 0 0 0 0 1	4 0	The bar-bot has 5 basic ingredients; the initial stock is: 0 units ingredient type 1, 5 units ingredient type 2, 2 units ingredient type 3, 15 units ingredient type 4, 2 units ingredient type 5. At the bar-bot one makes 4 operations, all are cocktail requests and all can be done. Thus, they are 4 cocktails made and 0 re-supplies.

Worktime: 150 de minutes