Hay Points

Each employee of a bureaucracy has a *job description* — a few paragraphs that describe the responsibilities of the *job*. The employee's *job description*, combined with other factors, such as seniority, is used to determine his or her salary.

The *Hay Point* system frees the Human Resources department from having to make an intelligent judgement as to the value of the employee; the job description is merely scanned for words and phrases that indicate responsibility. In particular, job descriptions that indicate control over a large budget or management over a large number of people yield high Hay Point scores.

You are to implement a simplified Hay Point system. You will be given a Hay Point dictionary and a number of job descriptions. For each job description you are to compute the salary associated with the job, according to the system.

Input

The first line of input contains 2 positive integers: $m \le 10\,000$, the number of words in the Hay Point dictionary, and $n \le 100$, the number of job descriptions. m lines follow; each contains a word (a string of up to 16 lower-case letters) and a dollar value (an integer between 0 and $1\,000\,000$). The m words in the dictionary are distinct. Following the dictionary are the n job descriptions. Each job description consists of between 1 and 200 lines of text; for your convenience the text has been converted to lower case and has no characters other than letters, numbers, and spaces. Each line is at most 200 characters long. Each job description is terminated by a line containing a period.

Output

For each job description, output the corresponding salary computed as the sum of the Hay Point values for all words that appear in the description. Words that do not appear in the dictionary have a value of 0.

You may assume that every answer is less than 2 000 000 000.

Sample Input 1

administer 100000 spending 200000 manage 50000 responsibility 25000 expertise 100 skill 50 money 75000 the incumbent will administer the spending of kindergarden milk money and exercise responsibility for making change he or she will share responsibility for the task of managing the money with the assistant whose skill and expertise shall ensure the successful spending exercise. this individual must have the skill to perform a heart transplant and expertise in rocket science

Sample Output 1

700150 150 Problem ID: haypoints CPU Time limit: 1 second Memory limit: 1024 MB Difficulty: 2.0

Source: Waterloo Programm Contest 2002-06-01

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