1 Decrypt a line of text

Encrypting and Decrypting text is a common activity. Replacing a letter with another letter is insecure. One of the secure methods is to follow dynamic letter replacement such that no two letters are replaced by the same letter. A line of text encrypted through the following rules.

1. From the input words, a dictionary of known-words is created.
2. All input words are in lower case, one word per line and are arranged in alphabetical order
3. The encrypted lines consist of words from the dictionary of known-words only.
4. There would not be more than 1000 words in the dictionary.
5. A word shall have less than 16 characters.
6. The input encrypted line contains only lower case letters and spaces and shall not exceed more than 80 characters.

Write a program to decrypt a line of text, assuming that line uses a different set of replacements, and that all words in the decrypted text are from a dictionary of known-words. If there is no matching, replace every letter of the alphabet by an asterisk.

Input/Output

Input	Output	Explanation
5 alice in land the wonder xopkm bltymv oxty	alice wonder land	**Input Explanation :** 1) First Line 5 indicates the number of words in a dictionary. 2) Next 5 lines represent words in the dictionary. 3) Last line indicates a line of text decrypt **Output Explanation :** After successful replacement of letters of decrypted line based on the words of dictionary the output is **alice wonder land** **some of the encrypted letters** **x->a, o->l, p->i, k->c, m->e**

4 alice in land the ab ijkl mno	** **** ***	**Explanation :** There is no exact matching found for letter **n** **so output is** ** **** ***

2 Strike effect

Local Buses in China calls for regular strikes
Some buses call strikes every 3rd day. some buses call strike on every 4th day and so on
Given the number of days and number of local buses and on which day the the strike goes on determine the number of working days among the given number of days

Note :-
We always start the working day on a Sunday.
There are no strikes on either Friday or Saturday.

Given the number of buses and total number of days N, determine
the number of working days lost in those N days.

Input/Output

Input	Output	Explanation
14 3 3 4 8	5	First Line **14** indicates the number of days Second Line **3** indicates number of buses Next 3 lines indicates day of each bus call strike (First 3 means 1st bus calls strike on every 3rd day) **Given the number of buses** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 Days Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa LocalBus 1 x x x LocalBus 2 x x x LocalBus 3 x Strikes 1 2 3 4 5 The First local bus strikes goes on every 3rd day i.e, Tue, Fri,Mon,Thur The Second Local bus strikes goes on every 4th day i.e., Wed,Sun,Thur The Third Local bus strikes goes on every 8th day i.e., Monday There will be exactly five strikes (on days 3, 4, 8, 9, and 12) over the 14 days. There is no strike on day 6 since it falls on Friday. Hence we lose five working days in two weeks. so the output is 5

3 Redesign Number Plates

The Mayor of Rome City has decided to abolish using English numerals for all Door & Street numbers in the city.

He wants to popularize Roman Numerals and to that effect he passed an order to replace all street and door numbers with roman numerals. Roman numerals are a combination of standard symbols like (I, V, X, L, C).

The Mayor wants the roman digits to be cut from rectangular brass blocks of standard size. From a brass block, we can cut either 6 of (I or L) or 4 of (X or V or C) digits.

As a pilot project, he wants to try out a few selected streets to find out the total number of roman digits needed to replace all English numbers with Roman numbers and also the number of brass blocks needed.

Write a program to read the range of street numbers i.e., start street number and end street number (in English form) and

1. Determine the total number of each roman digit i.e., total number of I's, V's, X's, L's and C's, need to form street numbers between start and end street numbers (including both).

Display the total of each roman digit in a separate line followed by the total number of brass plates needed for all roman digits.

2. For any erroneous input, display invalid input followed input values.

Input/Output

Input	Output	Explanation
10 15	I 7 V 2 X 6 L 0 C 0 TP 4	**Input Explanation :** two Space separated integers (Indicates range of street numbers) **Output Explanation:** Total number of I's, V's, X's, L's and C's, need to form street numbers between start and end street numbers 7,2,6,0,0 **Total Number of Brass Plates Needed is 4**
10 5	invalid input 10 5	