# **A. Sly cipher**

|  |  |
| --- | --- |
| Limitation time | 2 seconds |
| Limitation memory | 512Mb |
| Input | standard input or input . txt |
| Output | standard output or output . txt |

The well-known company Tyndeks is once again recruiting interns.

Taking care of the personal data of applicants, the company came up with a cunning encryption algorithm:

* The number of different characters in the full name is counted (case is important, AND and a are different characters).
* The sum of the digits in the day and month of birth is taken, multiplied by 64 .
* For the first (by position in the word) letter of the surname, its number in the alphabet is determined (in 1 -indexation), multiplied by 256 (letter case is not important).
* Received numbers summed up .
* The result is translated into 16 number system ( **in upper case** ).
* The result is saved only 3 least significant digits (if there are fewer significant digits, then the cipher is completed to 3 digits with leading zeros).

Your task is to help calculate for each candidate his cipher.

## Input Format

Enter a number on the first line N ( 1≤N≤10000 ) - the number of candidates and ciphers.

Followed by N lines in CSV format ( f j , i j , o j , d j , m j , y j ) - information about candidates:

* Surname f j , name i j and patronymic o j ( 1≤ ∣∣ f j ∣ ∣ , ∣ ∣ i j ∣∣ , ∣∣ o j ∣∣ ≤15 ) - strings consisting of Latin letters of upper and lower case;
* birthday d j , month of birth mj \_ and year of birth y j are integers that define **correct**a date between January 1, 1950 and December 31, 2021.

## Format output

On a single line print N lines k1 , \_ k2 , \_ … , k N , where kj \_ - cipher j -th candidate ( **upper case** ). Candidates numbered from 1 before N is ok input .

## Example

| **Input** | **Output**  Скопировать вывод |
| --- | --- |
| 2  Volozh, Arcady , Yurievich, 11,2,1964  Segalovich, Ilya , Valentinovich, 13,9,1964 | 71064F |

## Notes

Consider test example .

First candidate - Volozh, Arcady , Yurievich, 11,2,1964 :

* Various characters in the full name: V , o , l , z , h , A , r , c , a , d , y , Y , u , i , e , v - all of them **16** .
* The sum of the digits in the day and month of birth is 1+1+2= **4** .
* Number in the alphabet of the first letter of the surname V equals **22** .
* Final meaning cipher equals 16+4 ⋅ 64+22 ⋅ 256= **5904** .
* AT In hexadecimal notation, this number is represented as **1710** .
* We are only interested 3 the last digits, so it remains **710** .

Second candidate - Segalovich, Ilya , Valentinovich, 13,9,1964 :

* Various characters in the full name: S , e , g , a , l , o , v , i , c , h , I , y , V , n , t - all of them **15** .
* The sum of the digits in the day and month of birth is 1+3+9= **13** .
* Number in the alphabet of the first letter of the surname S is **19** .
* Final meaning cipher equals 15+13 ⋅ 64+19 ⋅ 256= **5711** .
* AT In hexadecimal notation, this number is represented as **164F** . **\_**
* We are only interested 3 the last digits, so it remains **64F** . **\_**