**B : So unknowing baby**

You are appointed to teach a baby. Teaching little is enjoyable, but if it goes a very long time it becomes a boring job.

Now you are teaching ROMAN Numbers from 1 to 10. The baby makes you boring by asking the same question repeatedly. Every time their questions are same, "What is the number \_\_\_\_?". To avoid repeated questions you make a program that can answer the question if you answered it before. Now, your another job is to write a program that can record the statistics. We know the first ten ROMAN numbers are :

i -> one

ii -> two

iii -> three

iv -> four

v -> five

vi -> six

vii -> seven

viii -> eight

ix -> nine

x -> ten

else -> NR (not recognized)

**Input :** First line get an integer number 0<=N<=10^5 (Some baby's are very unknowing)

And the next N line gets a string (max length 4) of roman number.

**Output :** There is two types of output from Human or Machine. First character of each output be 'H' or 'M' denoting human or machine respectively. Then print the answer as like example.

**NB:** If machine know all of ten number then it can say recognized or not. Otherwise Human have to answer.

**Example :**

**input:**

5

ii

vii

xii

vii

vvi

**output:**

H ii -> two

H vii -> seven

H xii -> NR

M vii -> seven

H vvi -> NR

**input:**

18

i

ii

iii

iv

v

vi

vii

viii

vvi

ix

iix

x

ix

v

vv

i

ii

viii

**output:**

H i -> one

H ii -> two

H iii -> three

H iv -> four

H v -> five

H vi -> six

H vii -> seven

H viii -> eight

H vvi -> NR

H ix -> nine

H iix -> NR

H x -> ten

M ix -> nine

M v -> five

M vv -> NR

M i -> one

M ii -> two

M viii -> eight

**Note :** In second test case after knowing all the number 1 to 10 human has no job. Now the machine can handle all the test case.