7ᵗʰ South African Regional
ACM Collegiate Programming Competition

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Problem F – Purple balloon
Word sums

Given a set of arithmetic expressions in English, calculate their results and output the answer in English.

Input

The first line of input will contain a single integer, N, which is the number of expressions that need to be evaluated. 1 <= N <= 1000. The next N lines will each contain an arithmetic expression of the form:

```
<NUMBER1> <OPERATION> <NUMBER2>
```

where <OPERATION> is one of:
```
plus
minus
times
divided by
```

and <NUMBER1> and <NUMBER2> are English representations of integers NUM1 and NUM2, such that -999 999 999 <= NUM1, NUM2 <= 999 999 999

Output

For each arithmetic expression, your program should calculate the result of that expression, ANS, and output the English representation <ANSWER>. If the operation is "divided by", then you are guaranteed that NUM2 will divide into NUM1 without any remainder. Also, -999 999 999 <= ANS <= 999 999 999.

Numbers and English

Every integer from -999 999 999 to 999 999 999 except 0 can be represented as

`[minus] [<prefix> million] [<prefix> thousand] [<prefix>]`

where [...] means that the ... is optional, and <prefix> is represented as

`[<digit> hundred] [[and] (<n-ty> [<digit>] | <teen> | ten | <digit>)]`

where (x | y | z | ...) means exactly one of x, y, z, ... and <n-ty> is

`(twenty | thirty | forty | fifty | sixty | seventy | eighty | ninety)`

and <teen> is

`(eleven | twelve | thirteen | fourteen | fifteen | sixteen | seventeen | eighteen | nineteen)`

and <digit> is

`(one | two | three | four | five | six | seven | eight | nine)`

The number 0 is represented simply by

`nought`

In the <prefix> definition, the [and] part is used iff either:
* The [<digit> hundred] part of <prefix> is used
* This is is the right-most <prefix> in the number and there is some other <prefix> left of this one

Examples of numbers in English:
131 - one hundred and thirty one
    * note the use of the "and" here because there's a "hundred" part in the <prefix>

2005 - two thousand and five

> * note the use of the "and" because there are two \<prefix>'es here ("two" and "and five") and "and five" is the right-most of the two prefixes

999 999 999 - nine hundred and ninety nine million nine hundred and ninety nine thousand nine hundred and ninety nine

-450 002 - minus four hundred and fifty thousand and two

Sample Input

```
4
ten plus twenty
minus three times two
one hundred and twenty one divided by one hundred and twenty one
two thousand minus minus one million
```

Sample Output

```
thirty
minus six
one
one million and two thousand
```