Numbers can be represented with arabic digits or with cardinal numerals. In payment checks, the user is supposed to write the same number twice, in both formats: In one place in the arabic digits format (e.g. 203) and in another place in the cardinal numerals format (e.g. duzentos e três).

Assume that a new generation of Optical Character Recognition (OCR) devices functions with a negligible margin of error. Accordingly, your customer, a Portuguese Bank which handles hundreds of thousands of payment checks per day, wants to develop an application to verify for each check, whether the number written in the numeral cardinals format matches the number written in the arabic digits format, so that only unmatching cases have to be handled manually.

To translate a given number from its cardinal numerals representation into its arabic digits representation.

Input

The program input consists of a text file. The number (in arabic digits representation) in the first line indicates the number of remaining lines. Each of the remaining lines of text contains a number in cardinal numerals format, correctly represented according to the Portuguese orthography and grammar.

For your convenience, here is a list of admissible punctuation marks and words integrating cardinal numerals (a set restricted for the sake of simplicity of the current programming problem):

- `,`
- `e`
- `zero, um, dois, tres, quatro, cinco, seis, sete, oito, nove`
- `dez, onze, doze, treze, catorze, quatorze, quinze, dezasseis, dezesseis, dezassete, dezessete, dezoito, dezanove, dezenove`
- `vinte, trinta, quarenta, cinquenta, sessenta, setenta, oitenta, noventa`
- `cem, cento, duzentos, trezentos, quatrocentos, quinhentos, seiscentos, setecentos, oitocentos, novecentos`
- `mil, milhao, milhoes, biliao, bilioes, bilhao, bilhoes`

Output

The program output is a text file with as many lines as the input file. Its first line is identical to the first line of the input file. Each subsequent i-th line contains, in arabic digits format, the number represented in numeral cardinals in the ith line of the input file.

Sample Input

```
12
quatro
vinte e tres
cento e vinte e sete
mil
doze mil duzentos e cinco
quatrocentos mil e cinco
quatrocentos e trinta e sete mil e cem
um milhao, cem mil quinhentos e seis
trezentos e trinta e dois bilioes, quinze mil cento e oito
mil milhoes
duzentos bilioes, setenta e oito milhoes, sete mil e cem
quinhentos bilioes e tres mil
```

Sample Output

```
12
4
23
127
1000
12205
400005
437100
1100506
332000015108
1000000000
200078007100
500000003000
```