Gauss' is a clever guy who is a little obsessed with information security, that's why he is always looking for the most secure password. After a long research Gauss is choosing for his password a palindromic prime number *ppm*, which is ultra secure, the only problem is that he always forgets it. As a help to his bad memory, Gauss wants to write a file with the decimal number produced by the division of one (1) and his password, $1/ppm$. Gauss knows that the result is always a pure recurring (periodic) decimal number, and therefore he only wants to save the number with its period. For example:

| Gauss' Password (PPM) | Decimal Number 1/PPM | Length 1/PPM (period) |
|---|---|---|
| 101 | 0,0099 | 4 |
| 757 | 0,001321003963011889035667107 | 27 |
| 191 | 0,00523560209424083769633507853403141361256545502617801047120418848167539267015706806282722513089 | 95 |
| 11311 | 0,000088409512863584121651489700291751392449827601449916010962779595084431084784722836177172663778622579789585359384669790469454513305631685969410308549199893908584563699054018212359649898329060206878260100786844664485898682698258332596587392803465652904252497568738396251436654584033241976836707629740960127309698523561135178145168420122005127751746087879055786402616921580762090 | 377 |
| 14341 | A number of 14340 decimals: 0,00006973014434139878669548845966111149850080189665992608604699811728610278223275922181115891499895404783487901819956767310508332752248790... | 14340 |
| 79997 | A number of 39998 decimals | 39998 |

Having the file, Gauss knows that he can execute an algorithm to remember his password. Can you help Gauss to write the file?

## Input

The first line of the input contains an integer $t$, the number of test cases, followed by $t$ lines, each line contains a palindromic prime number $n$ $(10 < n < 10^5)$.

## Output

For each test case print the pure recurring decimal number that will help Gauss to remember his password. (Use '.' as a decimal point)

## Sample Input

```
2
101
757
```

## Sample Output

```
0.0099
0.001321003963011889035667107
```