Phantom's Python Challenge

Time limit: 1.8s **Memory limit:** 768M

After all the ordeal, Christine decided to save your lives by kissing the Phantom. That was very nice of her. However, the Phantom considers letting Christine leave with Raoul, if and only if *you* can convince him that your party is worthy. He challenges you to write a program that shows all the primes under a specific number, while marking the twin primes. Easy as it may sound, the Phantom is also an expert programmer: you have to prove yourself to be at least as good as him. In Python, he expects you to write it in one statement. This means, no newlines or semicolons are allowed. To prevent the cheap way of achieving this, you are also not allowed to use `eval` or `exec`. To make sure he did not save that scarf for nothing, Raoul bribes you with 40 staggering points.

Input Specification

The input will be one line, containing the number N, such that $N \in \{50, 100, 1\,000, 1\,000\,000, 10\,000\,000\}$.

Output Specification

All the primes smaller than N, separated by whitespace, with a `*` after every number forming a twin prime with another. A twin prime is defined as a prime number n such that $n - 2$ or $n + 2$ are prime.

Scoring

If your solution is correct and contains only *one* statement without `eval` or `exec`, you get 10 points. For full points, your solution must be at most 114 characters long.

More accurately, let L be the length of your solution. If your solution is wrong, you receive 0. If $L \geq 160$, you get $\left(\frac{160}{L}\right)^2 \times 20 + 10$ points. If $L < 160$, your score is $\min\left(40, 40 - 10 \times \frac{L - 114}{46}\right)$.

Sample Input

```
50
```

Sample Output

```
2
3*
5*
7*
11*
13*
17*
19*
23
29*
31*
37
41*
43*
47
```