I Prime Cows

Farmer John is lining up his N cows for inspection ($1 \leq N \leq 10^5$)!
Each of these N cows can be associated with any digit 0 through 9. Let's denote the digit of the ith cow to be c_i.
Farmer John determines that the cows will pass inspection if the following two conditions both hold:

1. the F-digit number $c_1c_2c_3 \ldots c_F$ is prime, for *every* F such that $1 \leq F \leq N$.
2. the F-digit number $c_Nc_{N-1}c_{N-2} \ldots c_{N-F+1}$ is prime, for *every* F such that $1 \leq F \leq N$. In other words, the first condition satisfies for the reverse sequence.

Help the cows find the number of distinct ways they can assign digits to pass the inspection.

SHORT NAME: `prime`

INPUT FORMAT:
Line 1 contains the integer N, the number of cows.

OUTPUT FORMAT:
Output the number of ways the cows can be numbered to pass inspection.

SAMPLE INPUT:

```
2
```

SAMPLE OUTPUT:

```
4
```

The assignments that work in the sample case are 2|3, 3|7, 5|3, and 7|3.