

## 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  $i$ th cow to be  $c_i$ .

Farmer John determines that the cows will pass inspection if the  $F$ -digit number  $c_1c_2c_3 \dots c_F$  is prime, for *every*  $F$  such that  $1 \leq F \leq N$ .

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.