Project Euler #56: Powerful digit sum

A googol (10^{100}) is a massive number: one followed by one-hundred zeros. 100^{100} is almost unimaginably large: one followed by two-hundred zeros. Despite their size, the sum of the digits in each number is only 1.

Considering natural numbers of the form, a^b, where $a, b < N$, what is the maximum digital sum?

Input Format
Input contains an integer N

Output Format
Print the answer corresponding to the test case.

Constraints
$5 \le N \le 200$

Sample Input

```
5
```

Sample Output

```
13
```

Explanation
$4^4 = 256$ and $2 + 5 + 6 = 13$, which is the maximum digital sum for this range.