Project Euler #30: Digit Nth powers

This problem is a programming version of Problem 30 from projecteuler.net

Surprisingly there are only three numbers that can be written as the sum of fourth powers of their digits:

$$1634 = 1^4 + 6^4 + 3^4 + 4^4 \\ 8208 = 8^4 + 2^4 + 0^4 + 8^4 \\ 9474 = 9^4 + 4^4 + 7^4 + 4^4 $$

As 1 = 1^4 is not a sum it is not included.
The sum of these numbers is $1634 + 8208 + 9474 = 19316$.

Find the sum of all the numbers that can be written as the sum of N^{th} powers of their digits.

Input Format
Input contains an integer N

Output Format
Print the answer corresponding to the test case.

Constraints
$3 \le N \le 6$

Sample Input

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4
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Sample Output

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19316
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