

Project Euler #32: Pandigital products

Problem Statement

This problem is a programming version of [Problem 32](#) from [projecteuler.net](#)

We shall say that an N -digit number is pandigital if it makes use of all the digits 1 to N exactly once; for example, the 5-digit number, 15234, is 1 through 5 pandigital.

The product 7254 is unusual, as the identity, $39 \times 186 = 7254$, containing multiplicand, multiplier, and product is 1 through 9 pandigital.

Find the sum of all products whose multiplicand/multiplier/product identity can be written as a 1 through N pandigital.

HINT: Some products can be obtained in more than one way so be sure to only include it once in your sum.

Input Format

Input contains an integer N

Output Format

Print the answer corresponding to the test case.

Constraints

$$4 \leq N \leq 9$$

Sample Input

4

Sample Output

12