# Project Euler #32: Pandigital products

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 × 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 $N$

**Constraints**

$4 \leq N \leq 9$

**Output Format**

Print the answer corresponding to the test case.

**Sample Input**

```
4
```

**Sample Output**

```
12
```