Find the product of digits of n!, where ! is the [factorial](https://en.wikipedia.org/wiki/Factorial) operation.

**Example:**

ProdFactorial(4) = 8  
Since 4! = 1 \* 2 \* 3 \* 4 = 24, and 2 \* 4 = 8.

* **[input] integer n**
  + A non-negative integer.
* **[output] integer**

<https://codefights.com/challenge/oFdihkysupuzZhkF4>

static int ProdFactorial(int n)

{

int[] fact = new int[16];

fact[0] = 1;

fact[1] = 1;

fact[2] = 2;

fact[3] = 6;

fact[4] = 24;

fact[5] = 120;

fact[6] = 720;

fact[7] = 5040;

fact[8] = 40320;

fact[9] = 362880;

fact[10] = 3628800;

fact[11] = 39916800;

fact[12] = 479001600;

fact[13] = 1932053504;

fact[14] = 1278945280;

fact[15] = 2004310016;

int f;

if (n <= 15)

{

f = fact[n];

}

else

{

f = 2004310016;

}

//Console.WriteLine("\nfactorial: " + fact);

int prod = 1;

while (f > 0)

{

if (f % 10 == 0) return 0;

prod \*= f % 10;

f /= 10;

}

return (int)prod;

}