

# 793. Preimage Size of Factorial Zeroes Function

## Description

Let  $f(x)$  be the number of zeroes at the end of  $x!$ . Recall that  $x! = 1 * 2 * 3 * \dots * x$  and by convention,  $0! = 1$ .

- For example,  $f(3) = 0$  because  $3! = 6$  has no zeroes at the end, while  $f(11) = 2$  because  $11! = 39916800$  has two zeroes at the end.

Given an integer  $k$ , return the number of non-negative integers  $x$  have the property that  $f(x) = k$ .

### Example 1:

Input:  $k = 0$

Output: 5

Explanation:  $0!$ ,  $1!$ ,  $2!$ ,  $3!$ , and  $4!$  end with  $k = 0$  zeroes.

### Example 2:

Input:  $k = 5$

Output: 0

Explanation: There is no  $x$  such that  $x!$  ends in  $k = 5$  zeroes.

### Example 3:

Input:  $k = 3$

Output: 5

### Constraints:

- $0 \leq k \leq 10^9$

