1175. Prime Arrangements

Description

Return the number of permutations of 1 to `n` so that prime numbers are at prime indices (1-indexed.)

(Recall that an integer is prime if and only if it is greater than 1, and cannot be written as a product of two positive integers both smaller than it.)

Since the answer may be large, return the answer **modulo** `10^9 + 7` .

Example 1:

```
Input: n = 5
Output: 12
Explanation: For example [1,2,5,4,3] is a valid permutation, but [5,2,3,4,1] is not because the prime number 5 is at index 1.
```

Example 2:

```
Input: n = 100
Output: 682289015
```

Constraints:

- `1 <= n <= 100`