

762. Prime Number of Set Bits in Binary Representation

Description

Given two integers `left` and `right`, return *the count of numbers in the inclusive range `[left, right]` having a prime number of set bits in their binary representation*.

Recall that the **number of set bits** an integer has is the number of `1`'s present when written in binary.

- For example, `21` written in binary is `10101`, which has `3` set bits.

Example 1:

```
Input: left = 6, right = 10
Output: 4
Explanation:
6 -> 110 (2 set bits, 2 is prime)
7 -> 111 (3 set bits, 3 is prime)
8 -> 1000 (1 set bit, 1 is not prime)
9 -> 1001 (2 set bits, 2 is prime)
10 -> 1010 (2 set bits, 2 is prime)
4 numbers have a prime number of set bits.
```

Example 2:

```
Input: left = 10, right = 15
Output: 5
Explanation:
10 -> 1010 (2 set bits, 2 is prime)
11 -> 1011 (3 set bits, 3 is prime)
12 -> 1100 (2 set bits, 2 is prime)
13 -> 1101 (3 set bits, 3 is prime)
14 -> 1110 (3 set bits, 3 is prime)
15 -> 1111 (4 set bits, 4 is not prime)
5 numbers have a prime number of set bits.
```

Constraints:

- $1 \leq \text{left} \leq \text{right} \leq 10^6$
- $0 \leq \text{right} - \text{left} \leq 10^4$

