Every non-negative integer n has a binary representation.  For example, 5 can be represented as "101" in binary, 11 as "1011" in binary, and so on.  Note that except for n = 0, there are no leading zeroes in any binary representation.

The *complement* of a binary representation is the number in binary you get when changing every 1 to a 0 and 0 to a 1.  For example, the complement of "101" in binary is "010" in binary.

For a given number n in base-10, return the complement of it's binary representation as a base-10 integer.

**Example 1:**

**Input:** n = 5

**Output:** 2

**Explanation:** 5 is "101" in binary, with complement "010" in binary, which is 2 in base-10.

**Example 2:**

**Input:** n = 7

**Output:** 0

**Explanation:** 7 is "111" in binary, with complement "000" in binary, which is 0 in base-10.

**Example 3:**

**Input:** n = 10

**Output:** 5

**Explanation:** 10 is "1010" in binary, with complement "0101" in binary, which is 5 in base-10.

**Note:**

1. 0 <= n < 109
2. This question is the same as 476: <https://leetcode.com/problems/number-complement/>