

# 3125. Maximum Number That Makes Result of Bitwise AND Zero

## Description

Given an integer `n`, return the **maximum** integer `x` such that `x <= n`, and the bitwise **AND** of all the numbers in the range `[x, n]` is 0.

### Example 1:

**Input:** `n = 7`

**Output:** `3`

**Explanation:**

The bitwise **AND** of `[6, 7]` is 6.  
The bitwise **AND** of `[5, 6, 7]` is 4.  
The bitwise **AND** of `[4, 5, 6, 7]` is 4.  
The bitwise **AND** of `[3, 4, 5, 6, 7]` is 0.

### Example 2:

**Input:** `n = 9`

**Output:** `7`

**Explanation:**

The bitwise **AND** of `[7, 8, 9]` is 0.

### Example 3:

**Input:** `n = 17`

**Output:** `15`

**Explanation:**

The bitwise **AND** of `[15, 16, 17]` is 0.

### Constraints:

- `1 <= n <= 1015`

