

Problem 2139: Minimum Moves to Reach Target Score

Problem Information

Difficulty: Medium

Acceptance Rate: 51.92%

Paid Only: No

Tags: Math, Greedy

Problem Description

You are playing a game with integers. You start with the integer `1` and you want to reach the integer `target`.

In one move, you can either:

* **Increment** the current integer by one (i.e., `x = x + 1`). * **Double** the current integer (i.e., `x = 2 * x`).

You can use the **increment** operation **any** number of times, however, you can only use the **double** operation **at most** `maxDoubles` times.

Given the two integers `target` and `maxDoubles`, return _the minimum number of moves needed to reach_ `target` _starting with_ `1`.

Example 1:

Input: target = 5, maxDoubles = 0 **Output:** 4 **Explanation:** Keep incrementing by 1 until you reach target.

Example 2:

Input: target = 19, maxDoubles = 2 **Output:** 7 **Explanation:** Initially, x = 1 Increment 3 times so x = 4 Double once so x = 8 Increment once so x = 9 Double again so x = 18 Increment once so x = 19

****Example 3:****

****Input:**** target = 10, maxDoubles = 4 ****Output:**** 4 ****Explanation:**** Initially, x = 1
Increment once so x = 2 Double once so x = 4 Increment once so x = 5 Double again so x =
10

****Constraints:****

* `1 <= target <= 109` * `0 <= maxDoubles <= 100`

Code Snippets

C++:

```
class Solution {  
public:  
    int minMoves(int target, int maxDoubles) {  
  
    }  
};
```

Java:

```
class Solution {  
    public int minMoves(int target, int maxDoubles) {  
  
    }  
}
```

Python3:

```
class Solution:  
    def minMoves(self, target: int, maxDoubles: int) -> int:
```