

3100. Water Bottles II

Description

You are given two integers `numBottles` and `numExchange` .

`numBottles` represents the number of full water bottles that you initially have. In one operation, you can perform one of the following operations:

- Drink any number of full water bottles turning them into empty bottles.
- Exchange `numExchange` empty bottles with one full water bottle. Then, increase `numExchange` by one.

Note that you cannot exchange multiple batches of empty bottles for the same value of `numExchange` . For example, if `numBottles == 3` and `numExchange == 1` , you cannot exchange `3` empty water bottles for `3` full bottles.

Return *the **maximum** number of water bottles you can drink* .

Example 1:

	Full Bottles	Empty Bottles	numExchange	Bottles Drunk
Initially	13	0	6	0
Drink 13 bottles	0	13	6	13
Exchange	1	7	7	13
Exchange	2	0	8	13
Drink 2 bottles	0	2	8	15

Input: numBottles = 13, numExchange = 6
Output: 15
Explanation: The table above shows the number of full water bottles, empty water bottles, the value of numExchange, and the number of bottles drunk.

Example 2:

	Full Bottles	Empty Bottles	numExchange	Bottles Drunk
Initially	10	0	3	0
Drink 10 bottles	0	10	3	10
Exchange	1	7	4	10
Exchange	2	3	5	10
Drink 2 bottles	0	5	5	12
Exchange	1	0	6	12
Drink 1 bottle	0	1	6	13

Input: numBottles = 10, numExchange = 3
Output: 13
Explanation: The table above shows the number of full water bottles, empty water bottles, the value of numExchange, and the number of bottles drunk.

Constraints:

- `1 <= numBottles <= 100`
- `1 <= numExchange <= 100`

