You see the following special offer by the convenience store:

## "A bottle of Choco Cola for every 3 empty bottles returned"

Now you decide to buy some (say $N$ ) bottles of cola from the store. You would like to know how you can get the most cola from them.

The figure below shows the case where $N=8$. Method 1 is the standard way: after finishing your 8 bottles of cola, you have 8 empty bottles. Take 6 of them and you get 2 new bottles of cola. Now after drinking them you have 4 empty bottles, so you take 3 of them to get yet another new cola. Finally, you have only 2 bottles in hand, so you cannot get new cola any more. Hence, you have enjoyed $8+2$ $+1=11$ bottles of cola.

You can actually do better! In Method 2, you first borrow an empty bottle from your friend (?! Or the storekeeper??), then you can enjoy $8+3+1=12$ bottles of cola! Of course, you will have to return your remaining empty bottle back to your friend.

## Method 1:



