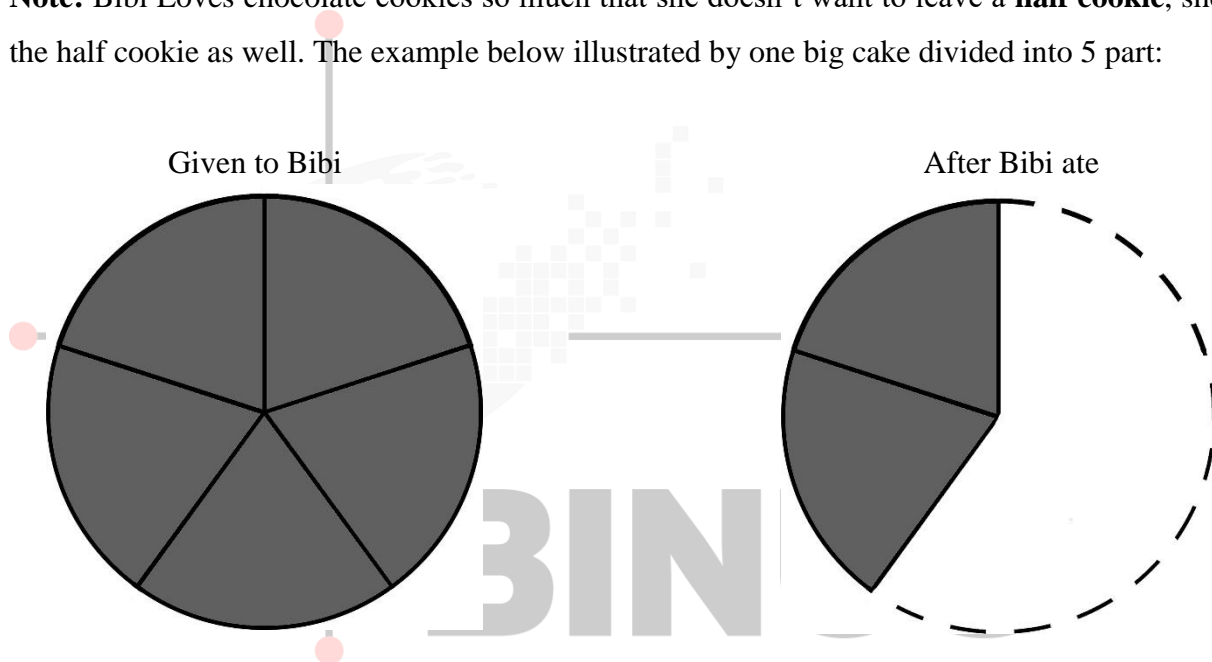


Hungry Bibi

Today is a special day for Bibi, which is her birthday. Bibi loves chocolate cookies so much, that she told her friends, relatives, and neighbors to give her some chocolate cookies on this birthday. Bibi likes to make something balance, so when she wants to eat cookies, she eats half of it. After some days eating cookies, she begins to sick, so she decided to stop eating the cookies and give the rest of the cookies to Jojo. Jojo wants to know how many cookies he receives, help him!

Note: Bibi Loves chocolate cookies so much that she doesn't want to leave a **half cookie**, she will eat the half cookie as well. The example below illustrated by one big cake divided into 5 part:



Format Input

The first line of input contains T , the number of test cases. It is guaranteed to be 3.

For each test case, there will be a line containing *cake* and *day*. The number of cookies Bibi get and the number of days Bibi ate the cookies, respectively.

Format Output

For each test case, output the number of cookies Jojo gets.

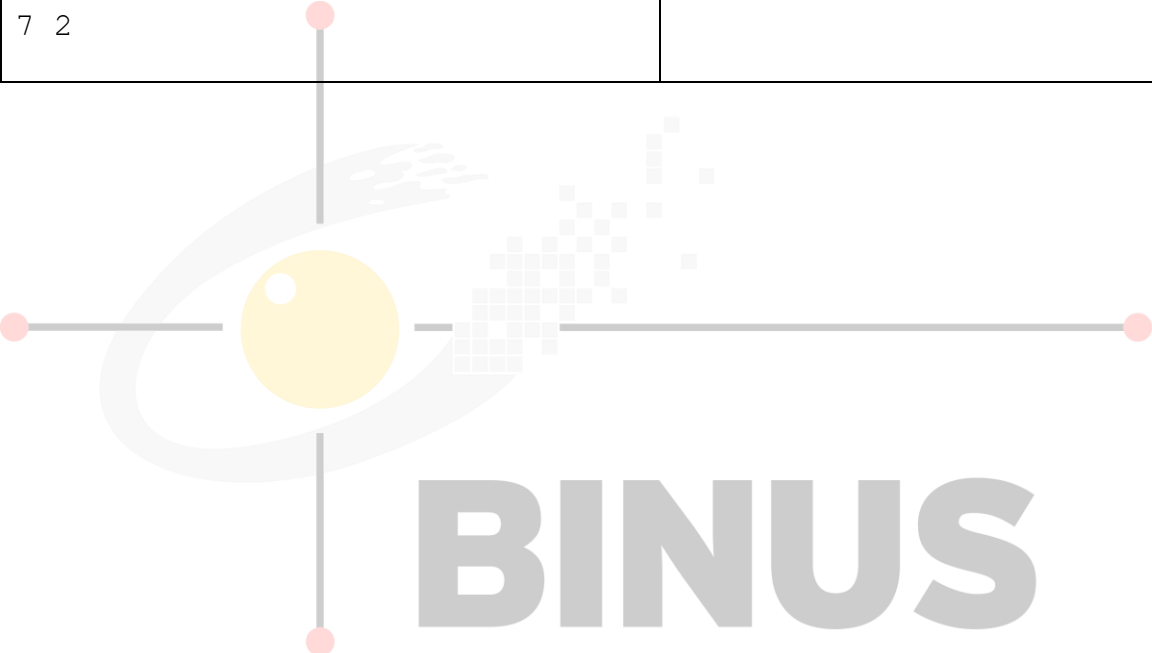
Constraints

T will be always 3.

$1 \leq \text{Cake} \leq 2^{32}$

$0 \leq \text{day} \leq 50$

Sample Input	Sample Output
3 1024 5 1 2 7 2	32 0 1



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