Chocolate Feast

by shashank21j

Little Bobby loves chocolate, and he frequently goes to his favorite **5&10** store, Penny Auntie, with n dollars to buy chocolates. Each chocolate has a flat cost of c dollars, and the store has a promotion where they allow you to trade in m chocolate wrappers in exchange for 1 free piece of chocolate.

For example, if $m = 2$ and Bobby has $n = 4$ dollars that he uses to buy 4 chocolates at $c = 1$ dollar apiece, he can trade in the 4 wrappers to buy 2 more chocolates. Now he has 2 more wrappers that he can trade in for 1 more chocolate. Because he only has 1 wrapper left at this point and $1 < m$, he was only able to eat a total of 7 pieces of chocolate.

Given n, c, and m for t trips to the store, can you determine how many chocolates Bobby eats during each trip?

Input Format

The first line contains an integer, t, denoting the number of trips Bobby makes to the store.
Each line i of the t subsequent lines contains three space-separated integers describing the respective n, c, and m values for one of Bobby's trips to the store.

Constraints

- $1 \leq t \leq 1000$
- $2 \leq n \leq 10^5$
- $1 \leq c \leq n$
- $2 \leq m \leq n$

Output Format

For each trip to Penny Auntie, print the total number of chocolates Bobby eats on a new line.

Sample Input

```
3
10 2 5
12 4 4
6 2 2
```

Sample Output

```
6
3
5
```

Explanation

Bobby makes the following 3 trips to the store:

1. He spends his 10 dollars on 5 chocolates at 2 dollars apiece. He then eats them and exchanges all 5 wrappers to get 1 more chocolate. We print the total number of chocolates he ate, which is 6.

2. He spends his 12 dollars on 3 chocolates at 4 dollars apiece; however, he needs 4 wrappers to trade for his next chocolate. Because he only has 3 wrappers, he cannot purchase or trade for any more chocolates. We print the total number of chocolates he ate, which is 3.

3. He spends 6 dollars on 3 chocolates at 2 dollars apiece. He then exchanges 2 of the 3 wrappers for 1 additional piece of chocolate. Next, he uses his third leftover chocolate wrapper from his initial purchase with the wrapper from his trade-in to do a second trade-in for 1 more piece of chocolate. At this point he has 1 wrapper left, which is not enough to perform another trade-in. We print the total number of chocolates he ate, which is 5.

Submissions: 59534
Max Score: 25
Difficulty: Easy

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```
using System;
using System.Collections.Generic;
using System.IO;
using System.Linq;
class Solution {

    static void Main(String[] args) {
        int t = Convert.ToInt32(Console.ReadLine());
        for(int a0 = 0; a0 < t; a0++){
            string[] tokens_n = Console.ReadLine().Split(' ');
            int n = Convert.ToInt32(tokens_n[0]);
            int c = Convert.ToInt32(tokens_n[1]);
            int m = Convert.ToInt32(tokens_n[2]);

            int chocolates_comidos = n / c;
            int envoltorios = chocolates_comidos;
            do
            {
                chocolates_comidos += envoltorios / m;
                int resto_envoltorios = envoltorios % m;
                envoltorios = envoltorios / m + resto_envoltorios;

            } while (envoltorios >= m);
            Console.WriteLine(chocolates_comidos);

        }
    }
}
```

Line: 15 Col: 13

Upload Code as File Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

- Test Case #0
- Test Case #1
- Test Case #2
- Test Case #3
- Test Case #4
- Test Case #5
- Test Case #6
- Test Case #7
- Test Case #8
- Test Case #9

Next Challenge