Chocolate Feast

HackerRank

Little Bobby loves chocolate. He frequently goes to his favorite 5 & 10 store, Penny Auntie, to buy them. They are having a promotion at Penny Auntie. If Bobby saves enough wrappers, he can turn them in for a free chocolate.

Example

 $n = 15 \ c = 3 \ m = 2$

He has 15 to spend, bars cost 3, and he can turn in 2 wrappers to receive another bar. Initially, he buys 5 bars and has 5 wrappers after eating them. He turns in 4 of them, leaving him with 1, for 2 more bars. After eating those two, he has 3 wrappers, turns in 2 leaving him with 1 wrapper and his new bar. Once he eats that one, he has 2 wrappers and turns them in for another bar. After eating that one, he only has 1 wrapper, and his feast ends. Overall, he has eaten 5 + 2 + 1 + 1 = 9 bars.

Function Description

Complete the *chocolateFeast* function in the editor below.

chocolateFeast has the following parameter(s):

- int n: Bobby's initial amount of money
- *int c:* the cost of a chocolate bar
- *int m:* the number of wrappers he can turn in for a free bar

Returns

• *int:* the number of chocolates Bobby can eat after taking full advantage of the promotion

Note: Little Bobby will always turn in his wrappers if he has enough to get a free chocolate.

Input Format

The first line contains an integer, t, the number of test cases to analyze.

Each of the next t lines contains three space-separated integers: n, c, and m. They represent money to spend, cost of a chocolate, and the number of wrappers he can turn in for a free chocolate.

Constraints

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

Sample Input

```
STDIN Function
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3 t = 3 (test cases)
10 2 5 n = 10, c = 2, m = 5 (first test case)
12 4 4 n = 12, c = 4, m = 4 (second test case)
6 2 2 n = 6, c = 2, m = 2 (third test case)
```

Sample Output

6 3 5

Explanation

Bobby makes the following 3 trips to the store:

- 1. He spends 10 on 5 chocolates at 2 apiece. He then eats them and exchanges all 5 wrappers to get 1 more. He eats 6 chocolates.
- 2. He spends his 12 on 3 chocolates at 4 apiece. He has 3 wrappers, but needs 4 to trade for his next chocolate. He eats 3 chocolates.
- 3. He spends 6 on 3 chocolates at 2 apiece. He then exchanges 2 of the 3 wrappers for 1 additional piece. 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. At this point he has 1 wrapper left, which is not enough to perform another trade-in. He eats 5 chocolates.