

DMOPC '15 Contest 6 P1 - Double XP Weekend

Time limit: 2.0s **Memory limit:** 64M

Xyene is preparing for the MMORPG *ScapeRune*'s Double XP Weekend. In *ScapeRune*, there are many skills, with each player having a certain integer amount of experience in it. **Xyene** currently has E_i experience in the *Uncooking* skill (a skill dedicated to the uncooking of cooked fish), and he would like to get E_f experience in Uncooking. In order to do so, he will need to uncook fish, with the uncooking of each fish awarding him experience. Uncooking each fish costs C coins each, and gives B **base experience**.

A player may also possess **bonus experience** in a skill. Bonus experience is converted into actual experience every time a player gains experience, with amount of bonus experience used up equal to the base experience earned. **Xyene** currently has E_b bonus experience in the uncooking skill.

On Double XP Weekend, **Xyene** earns an additional amount of extra experience equal to the base experience of any actions he performed. In other words, if he uncooks some fish, he would earn an extra B experience. This effect **does not stack** with bonus experience on Double XP Weekend: assuming he has enough bonus experience, **Xyene** earns $3B$ experience every time he uncooks fish, consuming B bonus experience.

Xyene would like to know how much fish he must uncook and how much money he would need to spend in order to achieve his goal of E_f experience.

Input Specification

The input consists of the following integers, each on its own line, in order:

- E_i : **Xyene**'s current experience in Uncooking ($0 \leq E_i \leq 200\,000\,000$).
- E_f : **Xyene**'s desired experience in Uncooking ($0 \leq E_f \leq 200\,000\,000$; $E_f \geq E_i$).
- E_b : **Xyene**'s current bonus experience in Uncooking ($0 \leq E_b \leq 200\,000\,000$).
- B : the experience gained by the type of fish **Xyene** is Uncooking ($1 \leq B \leq 10\,000$).
- C : the cost per fish ($0 \leq C \leq 100\,000$).

Output Specification

The output consists of two lines, the first containing the number of fish **Xyene** needs to uncook, and the second the amount of coins doing so would cost him.

Sample Input

```
1798808
9684577
1048576
325
4428
```

Sample Output

```
10519
46578132
```

Explanation

Xyene currently has 1 798 808 experience in Uncooking and he wants to get to 9 684 577 experience. He has 1 048 576 bonus experience. In order to do so, he will be uncooking food that gives 325 experience per item, with each food item costs 4 428 to uncook.

- For the first 3 226 fish **Xyene** uncooks, he earns 325 base experience, 325 extra experience from Bonus XP Weekend, and 325 bonus experience is converted to real experience, for a total of 975 experience per fish. This will earn him 3 145 350 experience, in total.
- For the 3 227th fish, he would only convert 126 bonus experience, as he has no more left. This makes him earn 776 experience for it.
- If he uncooks 7 292 more fish, he would be able to get 4 739 800 more experience (at the rate of 650 per fish, since he is out of bonus experience).

After finishing his supply of fish, his final experience would be $1\,798\,808 + 3\,145\,350 + 776 + 4\,739\,800 = 9\,684\,734$, which is 157 experience above his goal. He could not uncook less fish and still reach his goal.

Therefore, **Xyene** must uncook 10 519 fish, at a cost of $4\,428 \times 10\,519 = 46\,578\,132$ coins.