

---

## Converting

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          5 seconds  
Memory limit:       256 megabytes

You are given 3 integers **a**, **b** and **c**. You need to convert **a** to **b**.

You can perform following operations on **a**:-

- 1) Multiply a by c.
- 2) Decrease a by 2.
- 3) Decrease a by 1.

You can perform this operation in any order and any number of times.

You need to find and print minimum number of steps it will take to convert **a** to **b**.

## Input

First line contains an integer **t** denoting the number of test cases.

Next **t** line contains three space separated integers **a**, **b**, **c**.

### Constraints:

$$1 \leq t \leq 10^4$$

$$1 \leq a, b, c \leq 10^9$$

## Output

Print minimum number of steps as output in new line for each test case.

## Example

standard input	standard output
2	3
3 10 2	3
11 6 2	

## Note

For test case 1: -

- 1) First multiply 3 with 2 then
- 2) Subtract 1 from 6 to get 5
- 3) Multiple 5 with 2 to get 10.

So, 3 steps.

For test case 2: -

- 1) Subtact 2 from 11, 2 times
- 2) Subtract 1 from 7.

So, 3 steps.