Coding Arena

Problem : Robot's move

A robot is programmed to move forward F meters and backwards again, say B meters, in a straight line. The Robot covers 1 meter in T units of time. On Robot's path there is an obstacle after distance D from initial position in forward direction. This forward and backward movement is performed repeatedly by the Robot.

Your task is to calculate amount of time taken before the Robot hits the obstacle.

Input Format:
First line contains total number of test cases, denoted by N
Next N lines, contain a tuple containing 4 values delimited by space
F B T D, where

1. **F** denotes forward displacement in meters
2. **B** denotes backward displacement in meters
3. **T** denotes time taken to cover 1 meter
4. **D** denotes distance from Robot's starting position and the obstacle in forward direction

Output Format:

For each test case print time taken by the Robot to hit the obstacle

Constraints:

First move will always in forward direction

1 <= N <= 100

backward displacement < forward displacement i.e. (B < F)

forward displacement (F) > 0

backward displacement (B) > 0

time (T) > 0

distance (D) > 0

All input values must be positive integers only

Sample Input and Output

SNo.	Input	Output
1	2 5 4 8 10 8 2 3 15	400 69

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note:

Participants submitting solutions in C language should not use functions from <conio.h> / <process.h> as these files do not exist in gcc

Note:

For C and C++, return type of main() function should be int.

Submit Answer

I , **ABHISHEK SARKAR** confirm that the answer submitted is my own.

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