

Round 3 2014

A. Magical, Marvelous Tour

B. Last Hit

C. Crime House

D. Willow

Contest Analysis

Questions asked

Submissions

Magical, Marvelous Tour

5pt	Not attempted 387/391 users correct (99%)
8pt	Not attempted 371/382 users correct (97%)

Last Hit

10pt	Not attempted 319/348 users correct (92%)
14pt	Not attempted 281/304 users correct (92%)

Crime House

12pt	Not attempted 140/239 users correct (59%)
22pt	Not attempted 16/42 users correct (38%)

Willow

15pt	Not attempted 60/82 users correct (73%)
24pt	Not attempted 0/3 users correct (0%)

Top Scores

EgorKulikov	86
ivan.popelyshev	86
Gennady.Korotkevich	86
vepifanov	86
sevenkplus	86
DmitryEgorov	71
ffao	71
wuzhengkai	71
eatmore	71
mk.al13n	71

Problem B. Last Hit

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the Quick-Start Guide to get started.

Small input
10 points

Solve B-small

Large input
14 points

Solve B-large

Problem

Diana needs your help maximizing her gold while playing her favorite game. She is often faced with a scenario where she is standing close to her tower and is facing **N** monsters. When that happens, Diana and the tower take turns shooting the monsters, and she goes first. During her turn, Diana *may* choose a monster to shoot at (this means Diana may choose to skip a turn). During its turn, the tower shoots the monster closest to it. Diana and the tower can not shoot dead monsters.

If Diana shoots at a monster, its hit points are reduced by **P**. If the tower shoots at a monster, its hit points are reduced by **Q**. If a monster's hit points are reduced below 1, it is killed. The i^{th} monster starts with **H_i** hit points. Diana is awarded **G_i** gold if her shot kills the i^{th} monster, but none if the tower's shot kills it. What is the maximum amount of gold Diana can obtain?

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each case begins with one line containing three space-separated integers representing **P**, **Q** and **N**. **N** lines then follow, with the i^{th} line containing two space-separated integers representing **H_i** and **G_i**.

The monsters are given in the order of their distance from the tower. In other words, the tower will shoot at the i^{th} monster only if all monsters $< i$ are dead.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1) and y is the maximum amount of gold that Diana can obtain.

Limits

$1 \leq T \leq 100$
 $20 \leq P \leq 200$
 $20 \leq Q \leq 200$
 $1 \leq H_i \leq 200$
 $0 \leq G_i \leq 10^6$

Small dataset

$1 \leq N \leq 4$

Large dataset

$1 \leq N \leq 100$

Sample

Input	Output
2	Case #1: 300
20 40 3	Case #2: 500
100 100	
20 100	
60 100	
20 60 3	
80 100	
80 200	
120 300	

In the second example, Diana should give up the first monster. During her first two turns she should soften up the third monster bringing it down to 80 hp, allowing her to easily get the last shot on the second and the third monsters.

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