Questions asked 1

Submissions

Password Attacker

8pt | Not attempted **736/1999 users** correct (37%)
13pt | Not attempted **352/627 users** correct (56%)

New Years Eve

11pt | Not attempted **142/438 users** correct (32%)
12pt | Not attempted **116/138 users** correct (84%)

Card Game

9pt | Not attempted **750/1147 users** correct (65%)
17pt | Not attempted **70/529 users** correct (13%)

Parentheses Order

10pt | Not attempted **679/996 users** correct (68%)
20pt | Not attempted **59/411 users** correct (14%)

Top Scores

Kriiii	100
flashmt	100
adurysk	100
pulkitg10	100
cxlove321	100
Prowindy	100
ariselpy	100
Sakib	100
atony	100
kellynq	100

Problem B. New Years Eve

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 11 points	Solve B-small
Large input 12 points	Solve B-large

Problem

At new years party there is a pyramidal arrangement of glasses for wine. For example, at the top level, there would just be one glass, at the second level there would be three, then 6 and then 10 and so on and so forth like the following image

The glasses are numbered using 2 numbers, **L** and **N**. **L** represents the level of the glass and **N** represents the number in that level. Numbers in a given level are as follows:

```
Level 1:
    1

Level 2:
    1
 2     3

Level 3:
       1
   2       3
4     5     6

Level 4:
          1
       2     3
   4      5      6
7     8     9     10
```

Each glass can hold **250ml** of wine. The bartender comes and starts pouring wine in the top glass(The glass numbered **L** = 1 and **N** = 1) from bottles each of capacity **750ml**.

As wine is poured in the glasses, once a glass gets full, it overflows equally into the 3 glasses on the next level below it and touching it, without any wine being spilled outside. It doesn't overflow to the glasses on the same level beside it. It also doesn't overflow to the any level below next level (directly).

For example: When the glass of **L** = 2 and **N** = 2 overflows, the water will overflow to glasses of **L** = 3 and **N** = 2, 4, 5.

Once that the bartender is done pouring **B** bottles, figure out how much quantity in ml of wine is present in the glass on level **L** with glass number **N**.

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case consists of three integers, **B**, **L**, **N**, **B** is the number of bottles the bartender pours and **L** is the glass level in the pyramid and **N** is the number of the glass in that level.

Output

For each test case, output one line containing "Case #x: y", where **x** is the test case number (starting from 1) and **y** is the quantity of wine in ml in that glass.

We recommend outputting y to 7 decimal places, but it is not required. y will be considered correct if it is close enough to the correct number: within an absolute or relative error of 10^{-6}. See the FAQ for an explanation of what that means, and what formats of real numbers we accept.

Limits

$1 \le \mathbf{T} \le 150$.

Small dataset

$1 \le \mathbf{B} \le 1000$.
$1 \le \mathbf{L} \le 100$.
$1 \le \mathbf{N} \le$ Number of glasses on the corresponding level.

Large dataset

$1 \le \mathbf{B} \le 50000$.
$1 \le \mathbf{L} \le 400$.
$1 \le \mathbf{N} \le$ Number of glasses on the corresponding level.

Sample

Input	Output
7 1 2 1 1 1 1 2 1 1 20 1 1 1 3 1 2 3 1 10 4 10	Case #1: 166.6666667 Case #2: 250.0000000 Case #3: 250.0000000 Case #4: 250.0000000 Case #5: 0.0000000 Case #6: 55.5555556 Case #7: 157.4074074