Contest Setting

locked

Problem Submissions

Time Limit : $C/C++$ $(1s)$, $Java$ $(2s)$
Memory Limit : $256\ MB$

SRBD is going to arrange ***Code Contest 2023*** and needs your help to set the rounds.

There will be 2 online rounds consisting of different problems. Each of the problems costs y coins to prepare.

The panel has decided that if N participants are registered for the contest, they should prepare at least m problems total, where $N \leq 2^m$ should be satisfied.

The m problems will be distributed between the 2 rounds, with the first round having $\lfloor \frac{m}{2} \rfloor$ problems and the second round having $\lceil \frac{m}{2} \rceil$ problems.

You should also know that to host a round with x problems, it will cost you x^2 coins.

There is a budget of B coins. You must determine the maximum number of participants that *SRBD* can register, so that the cost-sum of preparing problems and hosting the two rounds does not exceed the budget.

Input Format

The first line contains an integer t denoting the number of test cases. Then t testcases follow.

Each testcase consists of two integers B and y in a line, denoting the budget for the contest and the cost for preparing a single problem.

Constraints

$1 \leq t \leq 2 * 10^5$

$1 \leq B \leq 1750$

$1 \leq y \leq 100$

Output Format

For each testcase print the answer in a separate line.

Sample Input 0

```
3
5 1
100 10
6 9
```

Sample Output 0

```
4
128
1
```

Explanation 0

- In the $1st$ testcase: 4 participants will require 2 problems. Both rounds will have 1 problem each. Preparing the problems will cost $2 * 1 = 2$ coins. Hosting the rounds cost $1^2 = 1$ coins each. Sum total of cost is $2 + 1 + 1 = 4$ coins, which is within the budget.
- In the $2nd$ testcase: The two rounds have 3 and 4 problems.
- In the $3rd$ testcase: Notice there can be 0 problems in any of the rounds costing 0 coins. This can support 1 participant for the contest.

Submissions: 864
Max Score: 1

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C

```c
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main() {

    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}
```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code