

Coding Arena



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Problem : Urns and Probability

If an urn contains 4 colored balls, composed of 3 blue balls and 1 red ball, and 2 balls were taken at random, it can be seen that the probability of taking two blue balls, $P(BB) = (3/4) \times (2/3) = 1/2$.

Next such arrangement with 50% Probability of getting 2 blue balls at random occurs when the urn has 21 total balls with 15 blue and 6 red balls $[(15/21) \times (14/20)]$.

Given an arbitrary probability (p) and an integer N , find the number of urns with total number of balls $\leq N$ such that there is a composition of blue and red balls such that the probability of drawing two blue balls is equal to p .

Input Format:

The input consists of an integer N followed by a value p in a single line.

Output Format:

The output is a single integer value giving the number of urns with total number of balls $\leq N$, such that there is a composition of blue and red balls, such that the probability of drawing two blue balls is equal to p .

Constraints:

$2 < N \leq 20000$
 $0 < p \leq 1$

Example 1

Input
500 0.5

Output
3

Explanation
With $N=500$, these are the possible combinations
Total number of balls = 4, number of blue balls = 3
Total number of balls = 21, number of blue balls = 15
Total number of balls = 120, number of blue balls = 85

Example 2

Input
100 0.5

Output
2

Explanation
With $N=100$, these are the possible combinations
Total number of balls = 4, number of blue balls = 3
Total number of balls = 21, number of blue balls = 15

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`.

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- ☐ I would like to provide attribution to the following sources.

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