Problem E. The Power Sum

OS Linux

Find the number of ways that a given integer, X, can be expressed as the sum of the N^{th} powers of unique, natural numbers.

For example, if $X = 13$ and $N = 2$, we have to find all combinations of unique squares adding up to 13. The only solution is $2^2 + 3^2$.

Function Description

Complete the *powerSum* function in the editor below. It should return an integer that represents the number of possible combinations.

powerSum has the following parameter(s):

- *X*: the integer to sum to
- *N*: the integer power to raise numbers to

Input Format

The first line contains an integer X.
The second line contains an integer N.

Constraints

- $1 \leq X \leq 1000$
- $2 \leq N \leq 10$

Output Format

Output a single integer, the number of possible combinations caclulated.

Input	Output
10 2	1

Explanation 0

If $X = 10$ and $N = 2$, we need to find the number of ways that 10 can be represented as the sum of squares of unique numbers.

$10 = 1^2 + 3^2$

This is the only way in which 10 can be expressed as the sum of unique squares.

Input	Output
100 2	3

Explanation 1

$$100 = (10^2) = (6^2 + 8^2) = (1^2 + 3^2 + 4^2 + 5^2 + 7^2)$$

Input	Output
100 3	1

Explanation 2

100 can be expressed as the sum of the cubes of $1, 2, 3, 4$.
$(1 + 8 + 27 + 64 = 100)$. There is no other way to express 100 as the sum of cubes.