The Power Sum

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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 $2^2 + 3^2$.

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.

Sample Input 0

```
10
2
```

Sample Output 0

```
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.

Sample Input 1

```
100
2
```

Sample Output 1

```
3
```

Explanation 1

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

Sample Input 2

```
100
3
```

Sample Output 2

```
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.

Java 8

```
1  import java.io.*;
2  import java.math.*;
3  import java.security.*;
4  import java.text.*;
5  import java.util.*;
6  import java.util.concurrent.*;
7  import java.util.regex.*;
8
9  public class Solution {
10
11      // Complete the powerSum function below.
```

```
12      private static int count=0;
13      static int powerSum(int x, int n, int num, double sum) {
14          if (sum == x) {
15              return 1;
16          } else {
17              int ans = 0;
18              if (sum < x) {
19                  for (int i = num; i <= Math.pow(x, 1.0 / n); i++) {
20                      ans += powerSum(x, n, i + 1, sum + Math.pow(i, n));
21                  }
```

Line: 21 Col: 18

Upload Code as File

Test against custom input

Run Code

Submit Code

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4% 211/475

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

Testcase 0 Testcase 1 Testcase 2

Testcase 3 6 Testcases

Input (stdin) Download

```
10
2
```

Expected Output Download

```
1
```

Compiler Message

```
Success
```