Practice > Algorithms > Recursion > The Power Sum

# The Power Sum ☆

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### **Problem**

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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**

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

### **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

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Difficulty Medium

Max Score 20

Submitted By 19167

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represented as the sum of squares of unique numbers.

$$10 = 1^2 + 3^2$$

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

# Sample Input 1

1002

### **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

1003

# **Sample Output 2**

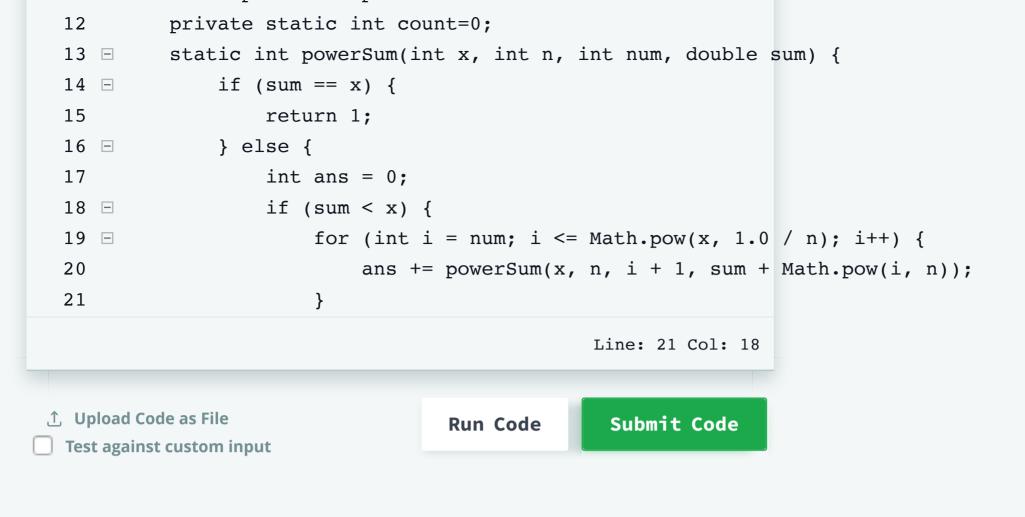
1

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





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**⊘** Testcase 1

**⊘** Testcase 2

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**6 Testcases** ∨

Input (stdin)	Download
10 2	
Expected Output	Download
Compiler Message	
Success	

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