ConsecutiveSums

In this problem you will implement four methods in the ConsecutiveSums class. The four methods are theseIntsSumTo(), fewestConsecutiveIntegersSumTo(), longestConsecutiveIntegersSumTo(), and smallestNumberGreaterThan().

* **In this problem only positive Integers (>0) are to be considered. That is, you may assume NO negative numbers!**

The theseIntsSumTo(int num, int n) returns an int[] containing n consecutive int values (in ascending order) which sum to num. If no int[]s exist that fulfills these requirements, return null.

The following code shows the results of the theseIntsSumTo(num, n) method.

|  |  |
| --- | --- |
| The following code | Returns |
| int[] ans = ConsecutiveSums.theseIntsSumTo( 25, 2); |  |
| ans.length; | 2 |
| ans[0]; | 12 |
| ans[1]; | 13 |

The fewestConsecutiveIntegersSumTo(int num) returns an int[] (with the smallest length greater than 1) containing consecutive int values (in ascending order) which sum to num.

* **Note: num > 0**

The following code shows the results of the fewestConsecutiveIntegersSumTo(num) method.

|  |  |
| --- | --- |
| The following code | Returns |
| ans = ConsecutiveSums.fewestConsecutiveIntegersSumTo( 100 ); |  |
| ans.length; | 5 |
| ans[0]; | 18 |
| ans[1]; | 19 |
| ans[2]; | 20 |
| ans[3]; | 21 |
| ans[4]; | 22 |

The longestConsecutiveIntegersSumTo(int num) returns an int[] (with the largest length) containing consecutive positive (i.e., greater than 0) int values (in ascending order) which sum to num.

* **Note: num > 0**

The following code shows the results of the fewestConsecutiveIntegersSumTo(num) method.

|  |  |
| --- | --- |
| The following code | Returns |
| ans = ConsecutiveSums.longestConsecutiveIntegersSumTo( 200 ); |  |
| ans.length; | 16 |
| ans[0]; | 5 |
| ans[1]; | 6 |
| ans[2]; | 7 |
| ans[3]; | 8 |
| ans[4]; | 9 |
| ans[5]; | 10 |
| ans[6]; | 11 |
| ans[7]; | 12 |
| ans[8]; | 13 |
| ans[9]; | 14 |
| ans[10]; | 15 |
| ans[11]; | 16 |
| ans[12]; | 17 |
| ans[13]; | 18 |
| ans[14]; | 19 |
| ans[15]; | 20 |

The smallestNumberGreaterThan(int num) the smallest number greater than (not equal to) num that can**not** be expressed as a sum of n consecutive positive ints.

* **Note: num > 0**

The following code shows the results of the smallestNumberGreaterThan(num) method.

|  |  |
| --- | --- |
| The following code | Returns |
| ConsecutiveSums.smallestNumberGreaterThan(2018) | 2048 |