

Devil Number

In this problem you are to complete four methods in the `DevilNumbers` class. The four methods are `isDevilNumber`, `getLargestDevilNumber`, `isTrueDevilNumber` and `getLargestTrueDevilNumber`.

A positive number is a Devil Number if any combination of the individual digits making up the number sum to 6. For example, 472 ($4 + 2 = 6$) and 463 (by default, any number containing a 6 is a Devil Number) are Devil numbers. Since no subset of the digits of 714 can be found that sums to 6, 714 and 471 are not Devil Numbers. The `isDevilNumber (num)` returns true if its `int` parameter `num` is a Devil Number and returns false otherwise.

The following tables show sample results of the `isDevilNumber (int num)` method.

You may assume `num > 0`

The following code	Returns
<code>DevilNumbers.isDevilNumber (2)</code>	false
<code>DevilNumbers.isDevilNumber (4305)</code>	false
<code>DevilNumbers.isDevilNumber (714)</code>	false
<code>DevilNumbers.isDevilNumber (471)</code>	false
<code>DevilNumbers.isDevilNumber (18047)</code>	false
<code>DevilNumbers.isDevilNumber (52370)</code>	false
<code>DevilNumbers.isDevilNumber (76)</code>	true
<code>DevilNumbers.isDevilNumber (472)</code>	true
<code>DevilNumbers.isDevilNumber (111111)</code>	true
<code>DevilNumbers.isDevilNumber (207060)</code>	true
<code>DevilNumbers.isDevilNumber (273021)</code>	true
<code>DevilNumbers.isDevilNumber (7152021)</code>	true

The `getLargestDevilNumber (num)` returns the largest Devil Number less than or equal to its `int` parameter `num`. If no Devil Number exists, return -1.

The table on the following page show sample results of the `getLargestDevilNumber (num)` method.

The following tables show sample results of the `getLargestDevilNumber (int num)` method.

You may assume `num > 0`

The following code	Returns
<code>DevilNumbers.getLargestDevilNumber(5)</code>	-1
<code>DevilNumbers.getLargestDevilNumber(720310)</code>	720310
<code>DevilNumbers.getLargestDevilNumber(43095)</code>	43093
<code>DevilNumbers.getLargestDevilNumber(1040)</code>	1036

A True Devil Number is a Devil Number which contains no 7. For example, 452 and 643 are Devil numbers, do not contain a 7 and are therefore True Devil Numbers. While 472 and 76 are both Devil Numbers, both are not True Devil Numbers because they contain one (or more) 7s. The `isTrueDevilNumbr (num)` returns true if its `int` parameter `num` is a True Devil Number and returns false otherwise.

The following tables show sample results of the `isTrueDevilNumber (num)` method.

You may assume `num > 0`

The following code	Returns
<code>DevilNumbers.isDevilNumber(472)</code>	false
<code>DevilNumbers.isDevilNumber(76)</code>	false
<code>DevilNumbers.isDevilNumber(720310)</code>	false
<code>DevilNumbers.isDevilNumber(43027)</code>	false
<code>DevilNumbers.isDevilNumber(10471)</code>	false
<code>DevilNumbers.isDevilNumber(52370)</code>	false
<code>DevilNumbers.isDevilNumber(452)</code>	true
<code>DevilNumbers.isDevilNumber(643)</code>	true
<code>DevilNumbers.isDevilNumber(111111)</code>	true
<code>DevilNumbers.isDevilNumber(20060)</code>	true
<code>DevilNumbers.isDevilNumber(213021)</code>	true
<code>DevilNumbers.isDevilNumber(9152021)</code>	true

The `getLargestDevilNumber(num)` returns the largest Devil Number less than or equal to its `int` parameter `num`. If no Devil Number exists, return `-1`.

The following tables show sample results of the `getLargestTrueDevilNumber(int num)` method.

You may assume `num > 0`

The following code	Returns
<code>DevilNumbers.getLargestTrueDevilNumber(4)</code>	<code>-1</code>
<code>DevilNumbers.getLargestTrueDevilNumber(111110)</code>	<code>111106</code>
<code>DevilNumbers.getLargestTrueDevilNumber(7060)</code>	<code>6999</code>
<code>DevilNumbers.getLargestTrueDevilNumber(217819)</code>	<code>216999</code>