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Problem Statement

Problem Statement for BadNeighbors

Problem Statement

The old song declares "Go ahead and hate your neighbor", and the residents of Onetinville have taken those words to heart. Every resident hates his next-door neighbors on both sides. Nobody is willing to live farther away from the town's well than his neighbors, so the town has been arranged in a big circle around the well. Unfortunately, the town's well is in disrepair and needs to be restored. You have been hired to collect donations for the Save Our Well fund.

Each of the town's residents is willing to donate a certain amount, as specified in the `int[] donations`, which is listed in clockwise order around the well. However, nobody is willing to contribute to a fund to which his neighbor has also contributed. Next-door neighbors are always listed consecutively in `donations`, except that the first and last entries in `donations` are also for next-door neighbors. You must calculate and return the maximum amount of donations that can be collected.

Definition

Class: `BadNeighbors`
 Method: `maxDonations`
 Parameters: `int[]`
 Returns: `int`
 Method signature: `int maxDonations(int[] donations)`
 (be sure your method is public)

Constraints

- `donations` contains between 2 and 40 elements, inclusive.
- Each element in `donations` is between 1 and 1000, inclusive.

Examples

```
0)
{ 10, 3, 2, 5, 7, 8 }
Returns: 19
The maximum donation is 19, achieved by 10+2+7. It would be better to take 10+5+8 except that the 10 and 8
donations are from neighbors.

1)
{ 11, 15 }
Returns: 15

2)
{ 7, 7, 7, 7, 7, 7, 7 }
Returns: 21

3)
{ 1, 2, 3, 4, 5, 1, 2, 3, 4, 5 }
Returns: 16

4)
{ 94, 40, 49, 65, 21, 21, 106, 80, 92, 81, 679, 4, 61,
  6, 237, 12, 72, 74, 29, 95, 265, 35, 47, 1, 61, 397,
  52, 72, 37, 51, 1, 81, 45, 435, 7, 36, 57, 86, 81, 72 }
Returns: 2926
```

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This problem was used for:
 2004 TCCC Online Round 4 - Division I, Level One

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