Practice S05P05: Pie

http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html

Reference: Week 5

Week of release: Week 5

Objective: Array

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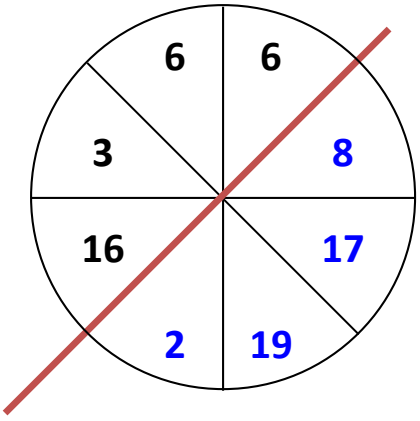
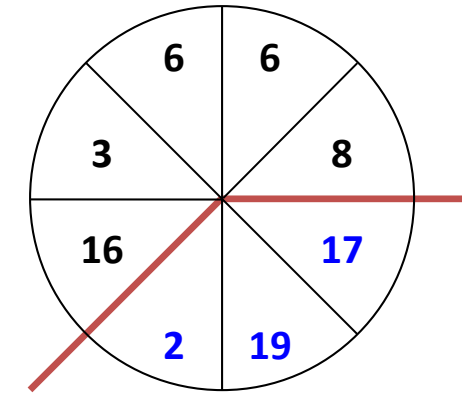
Task statement:

Alice and Bob are sharing a huge pie. It has already been cut into n slices (2<=n<=20) around the centre, and the number of cherries on each slice has been counted. Alice wants to choose a number of consecutive slices as her portion, and the rest to be Bob's portion. However, if the number of cherries in her portion is more than Bob's portion, Bob always swaps his portion with Alice's. Can you compute what is the maximum number of cherries Alice can get in the end?

Example: $n = 8$, and the slices are 6, 8, 17, 19, 2, 16, 3, 6, in clockwise order.



If Alice takes the 4 pieces from 8 to 2 in clockwise order, she will get 8 + 17 + 19 + 2 = 46 at first, and Bob will get 16 + 3 + 6 + 6 = 31. Bob will swap, and Alice will get 31 in the end.



If Alice takes the 3 pieces from 17 to 2 in clockwise order, she will get 17 + 19 + 2 = 38, and Bob will get 16 + 3 + 6 + 6 + 8 = 39. Bob will not swap. This is optimal.

Write a program **pie.c** that reads in the number of slices and the number of cherries on each slice. After that, it computes and print the maximum number of cherries Alice can get in the end.

Your program should include a **maxCherries()** function.

Sample runs:

```
Enter number of slices: 4
Enter numbers of cherries: 1 4 2 3
The maximum number of cherries Alice can get is 5.

Enter number of slices: 6
Enter numbers of cherries: 4 4 5 6 5 5
The maximum number of cherries Alice can get is 14.

Enter number of slices: 8
Enter numbers of cherries: 6 8 17 19 2 16 3 6
The maximum number of cherries Alice can get is 38.
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