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"BITWISE"

Bar the Bear is playing the game Bits with swanky Shen!
Bits is a very simple game. At the start, a circle of N non-negative integers A_1, A_2, A_3, ..., A_N is shown to both players. That is, to the left of integer A_i is the integer A_{i-1} if $i>1$ and the integer A_N otherwise. To the right of the integer A_i is the integer A_{i+1} if $i<N_i$ and the integer A_1 otherwise. Also an integer K is given to both players.
To win this game, one must divide the circle of integers A_i into exactly K contigous non-empty sections, such that the bitwise AND of the power of all sections is maximized
The power of a contiguous section of integer is the bitwise OR of all integers in that section.
Barr the bear is lazy and know that you are wise with bits. Hence, he has hired you to help him to win the game.

Goal:
Barr the Bear find the best way to divid the numbers to achieve the highest possible bitwise AND value

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PROBLEM Explanation:

At the start, a circle of N non-negative integers $A_1, A_2, A_3 \ldots A_N$ is shown both player.

To the left of A_i:

if $i > 1$, then to left of A_i is A_{i-1}

if $i = 1$, then to ~~right~~ left of A_1 is A_N

To the right of A_i:

if $i < N$, then right of A_i is A_{i+1}

if $i = N$, then right of A_N is A_1.

K contiguous represent how circle is divided into section.

Bitwise AND of the power of all sections is maximized.

The Bitwise OR the power of a contingous section of integers.

Sample INPUT 1:

4 2

2 3 4 1

4 represent the 4 integer in circle

2 represent K which specify the circle is divide, and also provide the game rule.

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$N = 4$

$k = 2$

$N = 4 \ (2, 3, 4, 1)$

For $N_1 = 2$

To the left of N_1 is $N_4 = 1$

To the right of N_1 is $N_2 = 3$

For $N_2 = 3$

To the left of N_2 is $N_1 = 2$

To the right of N_2 is $N_3 = 4$

For $N_3 = 4$

To the left of N_3 is $N_2 = 3$

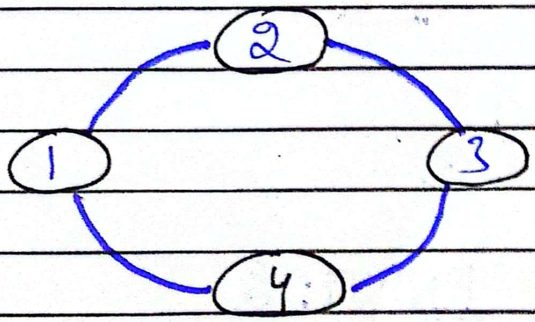
To the right of N_3 is $N_4 = 1$

For $N_4 = 1$

To the left of N_4 is $N_3 = 24$

To the right of N_4 is $N_1 = 2$

Graph:



First possible way:

2 OR 3 = Power 3

4 OR 1 = Power 5

2: 0010	4: 0100
3: 0011	0001
0011 3	0101

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calculate the bitwise AND in section power

3 AND 5 = 1

3: 0 0 1 1
5: 0 1 0 1
0 0 0 1

Second Possible way:

2 OR 4 = Power 6
3 OR 1 = Power 3

3: 0 0 1 1 | 2: 0 0 1 0
0 0 0 1 | 4: 0 1 0 0
0 0 1 1 | 0 1 1 0

6 AND 3 = 2

6: 0 1 1 0
3: 0 0 1 1
0 0 1 0

3rd possible Way:

3 OR 4 = 7 Power
1 OR 2 = 3 power

1: 0 0 0 1 | 3: 0 0 1 1
2: 0 0 1 0 | 4: 0 1 0 0
0 0 1 1 | 0 1 1 1

7 AND 3 = 3

7: 0 1 1 1
0 0 1 1
0 0 1 1

Output:
3

Sample INPUT: 2

5 2 3
1 3 5 2 4