Min Query

You are given a positive integer array **A** of size **N** and **Q** queries.Given an **2D integer array Queries of length Q** where each query has four integers **l1 , r1 , l2 , r2** . you have to calculate $(A_{l1}$ & A_{l1+1} & A_{l1+2} ...& $A_{r1})$ | $(A_{l2}$ & A_{l2+1} & A_{l2+2}....& $A_{r2})$

So Your task is to return an integer array answer of length Q where **answer[i] respresents the answer for i^{th}** query.

Note: & denote bitwise AND operation

| denote bitwise OR operation

Example 1:

```
Input :
N=5
Q=2
A={2,3,7,11,15}
Queries={{2,4,3,5},{1,5,2,3}}
Output:
{3,3}
Explanation:
for query 2 4 3 5 : answer = (3&7&11) | (7&11&15) = (3) | (3) = 3
for query 1 5 2 3 : answer = (2&3&7&11&15) | (3&7) = (2) | (3) = 3
```

Example 2:

```
Input :
N=6
Q=2
A={3,7,13,12,14,15}
Queries={{1,4,2,5},{1,2,3,6}}
Output:
{4 15}
Explanation:
for query 1 4 2 5 : answer = (3&7&13&12) | (7&13&12&14) = (0) | (4) = 4
for query 1 2 3 6 : answer = (3&7) | (13&12&14&15) = (3) | (12) = 15
```

Constraints:

$1 <= N <= 5 \times 10^4$

$1 <= Q <= 10^4$

$1 <= A[i] <= 10^9$

$1 <= l1 <= r1 <= N$

$1 <= l2 <= r2 <= N$