DMOPC '15 Contest 7 P4 - Magic

Time limit: 0.6s **Memory limit:** 64M

Two magicians named Alice and Bob participate in a challenge. The two participate in a race on a circular track split into K equal-length sectors, determined by the points $P_0, P_1, \ldots, P_{K-1}$.

- Alice starts at point P_a and runs through S_a sectors per second.
- Bob starts at point P_b and runs through S_b sectors per second.

If at any point in the race the distance between the two is less than D, Alice will use her magic to instantly push Bob a minimum distance such that the two magicians remain at a distance greater or equal to D. The winning conditions are as follows:

- Alice wins if it **is possible** that sometime during the race, the sum of the shortest distance (running on the circular track) between herself to P_0 and Bob to P_0 is prime.
- Bob wins if Alice cannot.

In a given scenario, who wins?

Input Specification

The first line of input will contain the integers K $(0 < K \leq 1000)$ and D $(0 \leq D < \frac{K}{2})$.
The second line of input will contain the integers S_a and S_b.
The third line of input will contain the integers P_a and P_b.

Output Specification

Either `Alice` or `Bob`, identifying the winner.

Constraints

- $S_a, S_b, P_a, P_b < K$.
- At least a turn is executed.
- In case Alice and Bob are on the same segment, Bob **is pushed behind** Alice.

Sample Input

```
6 2
2 3
0 1
```

Sample Output

```
Alice
```

Explanation

At the start, the positions of $(\text{Alice}, \text{Bob})$ are $(0, 1)$, but immediately this changes to $(0, 2)$ as Alice pushes Bob. In the second instant, we have the positions $(0 + 2 = 2, 2 + 3 = 5)$, such that the sum of distances to P_0 is $(6 - 2) + (6 - 5) = 5$. Since 5 is a prime number, Alice wins.