

1503. Last Moment Before All Ants Fall Out of a Plank

Description

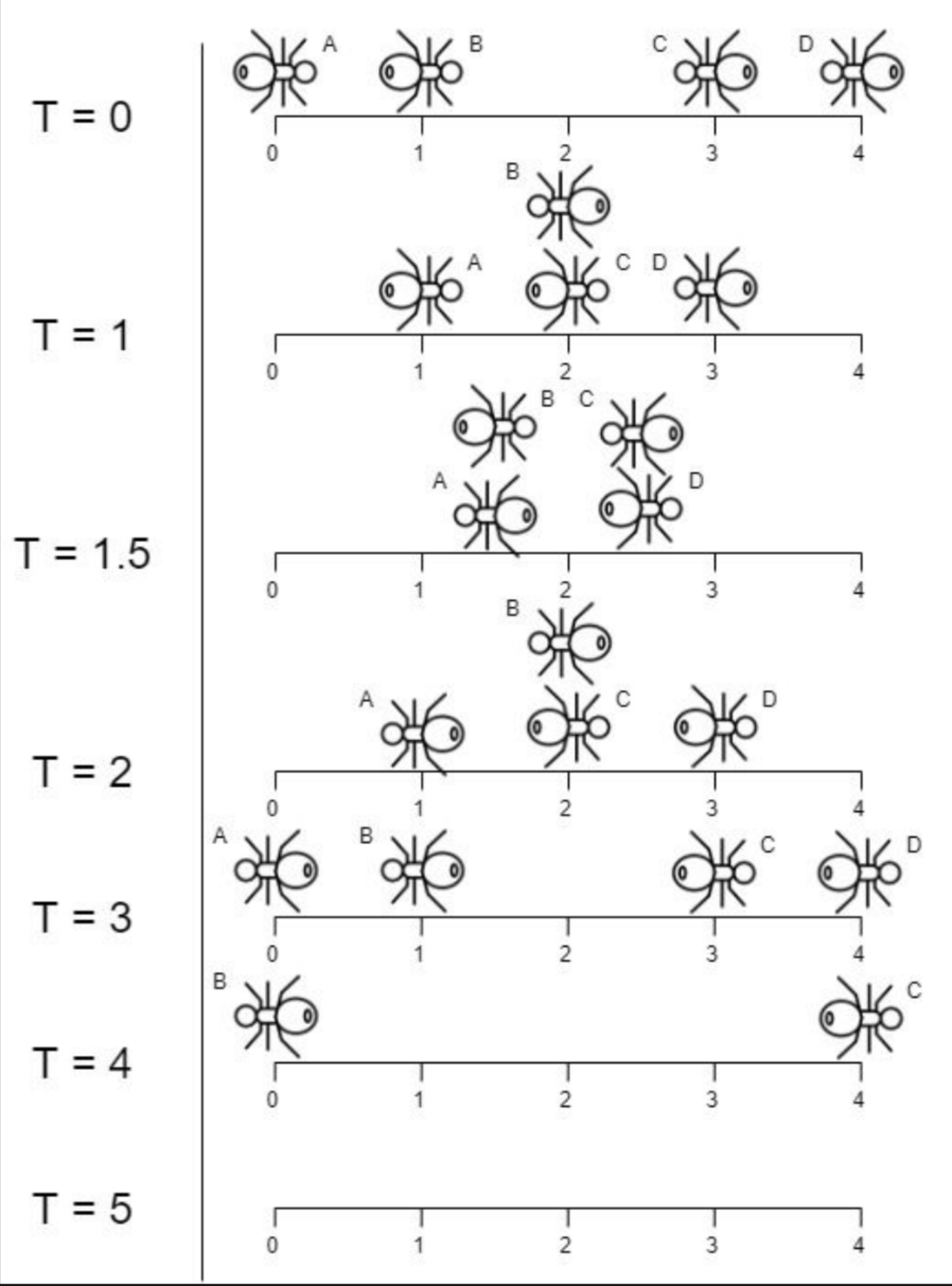
We have a wooden plank of the length `n` units . Some ants are walking on the plank, each ant moves with a speed of `1 unit per second` . Some of the ants move to the `left` , the other move to the `right` .

When two ants moving in two `different` directions meet at some point, they change their directions and continue moving again. Assume changing directions does not take any additional time.

When an ant reaches `one end` of the plank at a time `t` , it falls out of the plank immediately.

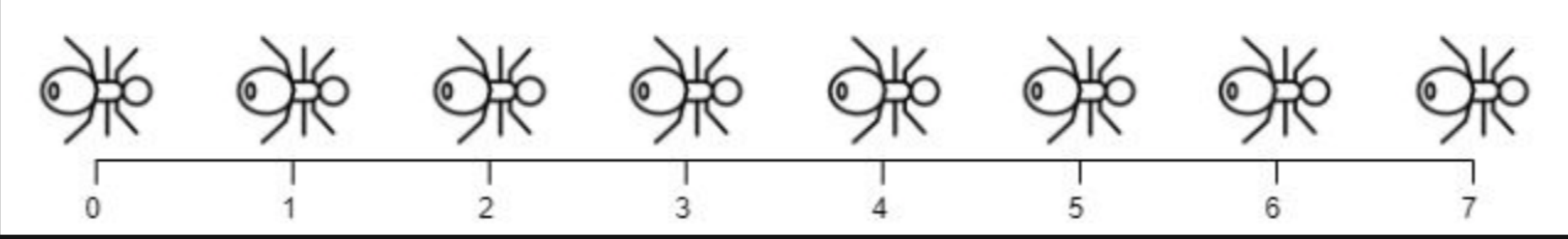
Given an integer `n` and two integer arrays `left` and `right` , the positions of the ants moving to the left and the right, return *the moment when the last ant(s) fall out of the plank* .

Example 1:



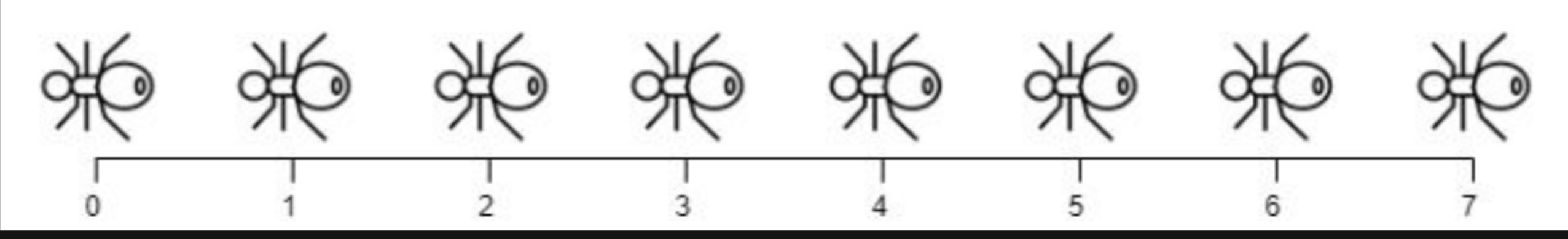
Input: `n = 4, left = [4,3], right = [0,1]`
Output: `4`
Explanation: In the image above:
-The ant at index 0 is named A and going to the right.
-The ant at index 1 is named B and going to the right.
-The ant at index 3 is named C and going to the left.
-The ant at index 4 is named D and going to the left.
The last moment when an ant was on the plank is `t = 4` seconds. After that, it falls immediately out of the plank. (i.e., We can say that at `t = 4.000000001`, there are no ants on the plank).

Example 2:



Input: `n = 7, left = [], right = [0,1,2,3,4,5,6,7]`
Output: `7`
Explanation: All ants are going to the right, the ant at index 0 needs 7 seconds to fall.

Example 3:



Input: `n = 7, left = [0,1,2,3,4,5,6,7], right = []`
Output: `7`
Explanation: All ants are going to the left, the ant at index 7 needs 7 seconds to fall.

Constraints:

- `1 <= n <= 104`
- `0 <= left.length <= n + 1`
- `0 <= left[i] <= n`
- `0 <= right.length <= n + 1`
- `0 <= right[i] <= n`
- `1 <= left.length + right.length <= n + 1`
- All values of `left` and `right` are unique, and each value can appear **only in one** of the two arrays.

