

Farmer John has built a new long barn, with N stalls. The stalls are located along a straight line at positions x_1, \dots, x_N ($0 < x_i < 1,000,000,000$).
He has C ($2 \leq C \leq N$) cows that don't like this barn layout and become aggressive towards each other if they are put into a stall. To prevent the cows from hurting each other, FJ wants to assign the cows to the stalls, such that the minimum distance between any two of them is as large as possible. What is the largest minimum distance?

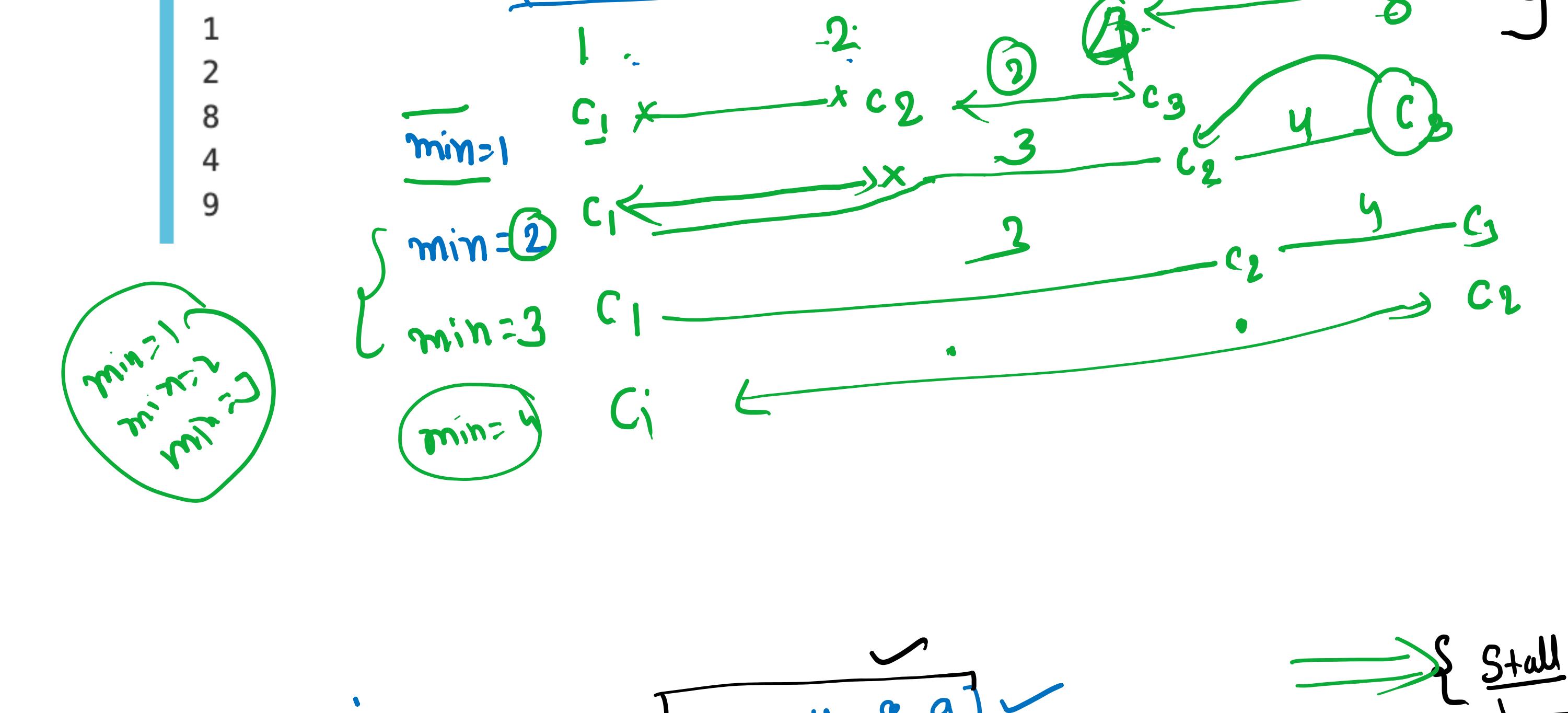
Input

t - the number of test cases, then t test cases follow.
* Line 1: Two space-separated integers: N and C .
* Lines 2.. $N+1$: Line $i+1$ contains an integer stall location, x_i .

Output

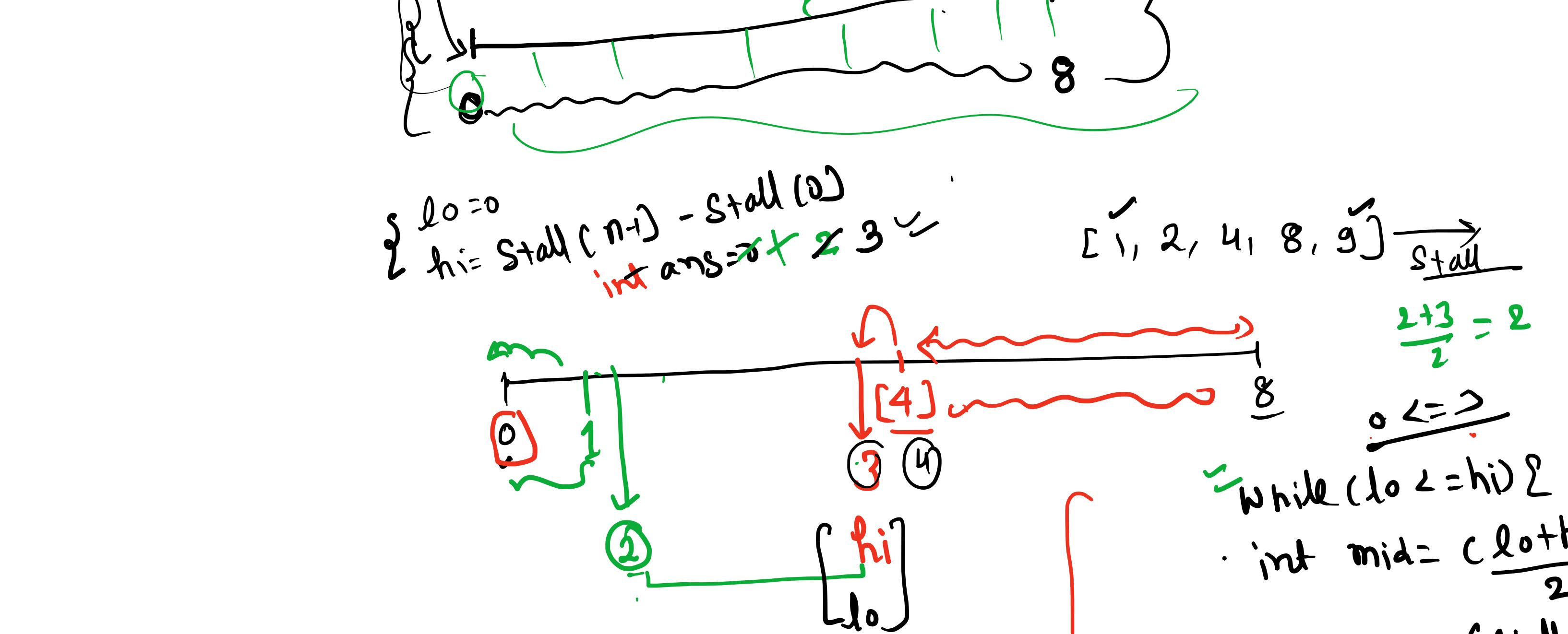
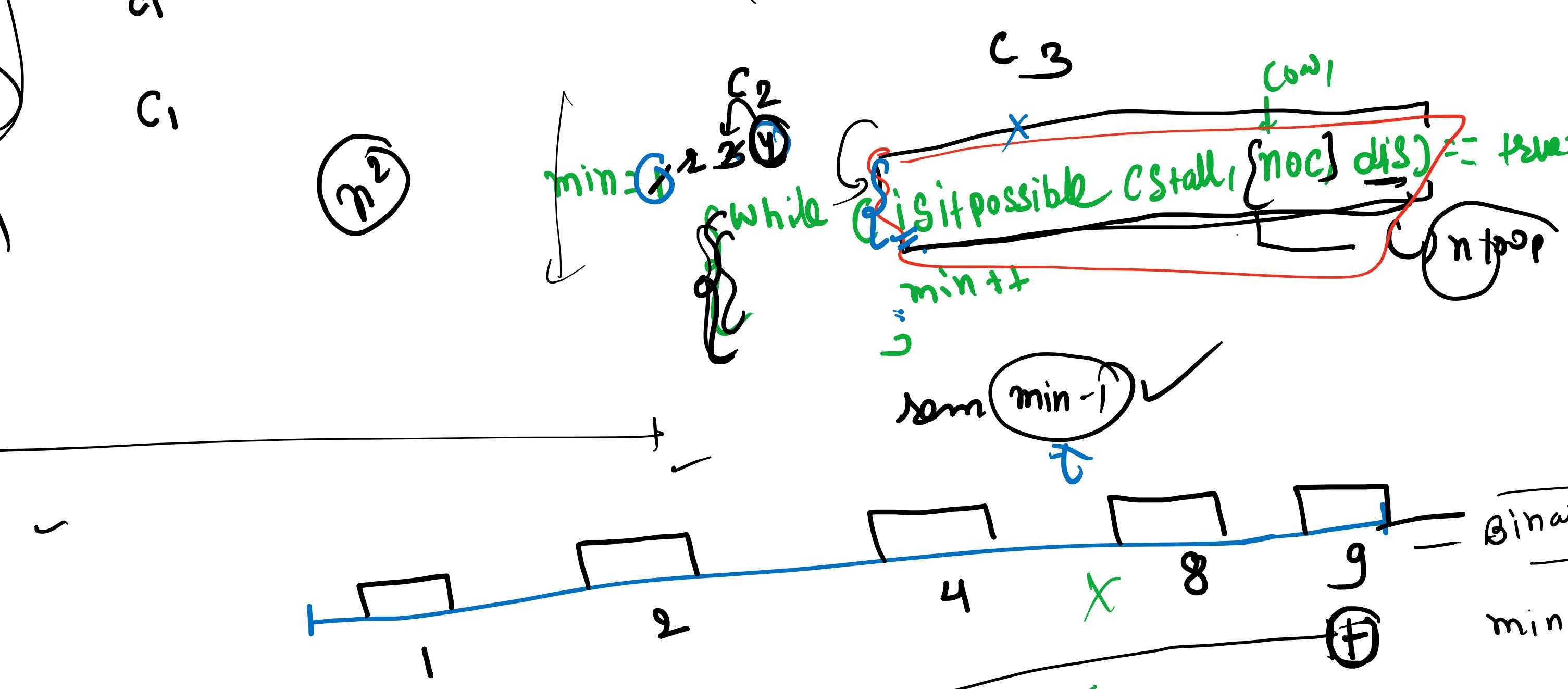
For each test case output one integer: the largest minimum distance.

Noodle

 $[1, 2, 8, 4, 9] \rightarrow [1, 2, 4, 8, 9]$

{ Stall cow = cur distance }

cow = 3
 $\min_1 = 1$
 $\min_2 = 2$
 $\min_3 = 4$
 $\min_4 = 7$



{ hi: Stall[n-1] - Stall[0] = 8
int ans = $\frac{0+8}{2} = 4$

mid = $\frac{0+8}{2} = 4$
lo = 0
hi = Stall[n-1] - Stall[0] = 8
int ans = $\frac{0+8}{2} = 4$

$\frac{0+8}{2} = 4$
 $\frac{6+3}{2} = 4$

$\frac{6+3}{2} = 4$
 $\frac{2+3}{2} = 2$

```
public static int Largest_minimum(int[] stall, int noc) {
    int lo = 0;
    int hi = stall.length - 1 - stall[0]; // 9 - 1
    int ans = 0;
    while (lo <= hi) {
        int mid = (lo + hi) / 2;
        if (isitpossible(stall, noc, mid) == true) {
            ans = mid;
            lo = mid + 1;
        } else {
            hi = mid - 1;
        }
    }
    return ans;
}
```

return call

0:55 PM

DDDDDDDDDD

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4 → [10, 20, 30, 40]

You are given number of pages in n different books and m students. The books are arranged in ascending order of number of pages. Every student is assigned to read some consecutive books.

The task is to assign books in such a way that the maximum number of pages assigned to a student is minimum.

—

10 [10, 20, 30, 40] m = 2 S1 → 100 S1 → 0

S2 → 100 S2 → 0 S2 → 30 S2 → 20 S2 → 10 S2 → 0

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