$0 \leq \mathbf{S_i} < \mathbf{E_i} \leq 24 \times 60$.

SWITCH TO EDITOR

Test set 1 (Visible Verdict)

$2 \leq \mathbf{N} \leq 10$.

Test set 2 (Visible Verdict)

$2 \leq \mathbf{N} \leq 1000$.

Sample

Input	Output
4 3 360 480 420 540 600 660 3 0 1440 1 3 2 4 5 99 150 1 100 100 301 2 5 150 250 2 0 720 720 1440	Case #1: CJC Case #2: IMPOSSIBLE Case #3: JCCJJ Case #4: CC

Sample Case #1 is the one described in the problem statement. As mentioned above, there are other valid solutions, like `JCJ` and `JCC`.

In Sample Case #2, all three activities overlap with each other. Assigning them all would mean someone would end up with at least two overlapping activities, so there is no valid schedule.

In Sample Case #3, notice that Cameron ends an activity and starts another one at minute 100.

In Sample Case #4, any schedule would be valid. Specifically, it is OK for one partner to do all activities.