**Final Question**

Let $n$ runners begin a race at the same time and position on a unit length circular track. Assume the runners all have constant speed and that all of their speeds are distinct: no two runners are running at the same speed. Let’s call a runner isolated at time $t$ if they are at least $1/n$ th the length of the track from every other runner at that moment.

**Claim:** Each runner has a time where they are isolated. [Note: They are not necessarily all isolated at the same time.]

The claim is vacuous for $n = 1$. So,

- Show the claim holds for $n = 2$.
- Show the claim holds for $n = 3$.
- How many runners can you show the claim holds true for?