Quiz 1: atomic snapshots

1. Prove that one-shot atomic snapshot satisfies self-inclusion and containment:
   ✓ **Self-inclusion**: for all $i$: $v_i$ is in $S_i$
   ✓ **Containment**: for all $i$ and $j$: $S_i$ is subset of $S_j$ or $S_j$ is subset of $S_i$

2. Show that the atomic snapshot is subject to the **ABA problem** (affecting correctness) in case the written values are not unique
Quiz 2

1. Would the (one-shot) IS algorithm be correct if we replace $A_r.update_i(v_i)$ with $U_r[i].write(v_i)$ and $A_r.snapshot()$ with $\text{scan}(U_r[1], \ldots, U_r[N])$?

2. Would it be possible to use only one array of $N$ registers?

3. Complete the proofs of Lemma 2 and Corollaries 1 and 2