We define the _abstract partial reversal algorithm_ as follows. Each node $u$ maintains a list $L_u$ of
neighbors $v$ that have fired and reversed edge $(u, v)$ since the last time $u$ fired.
Initially, all these lists are empty. Then, at each step, some set of sinks fire.
For each such sink $u$, let $N_u$ be the neighbors of $u$. Now,

- if $N_u - L_u \neq \emptyset$, then $u$ reverses all links $(u, v)$ where $v \in N_u - L_u$.
- if $N_u = L_u$, then reverse all links.

We also defined the _concrete partial reversal algorithm_ where each node $u$ is associated with a triple $(\alpha_u, \beta_u, u)$.
When $u$ fires, it sets $\alpha_u := \min\{\alpha_v\} + 1$, over all $v$ in $N_u$. Also, it sets $\beta_u := \min\{\beta_v\} - 1$, over all $v$ in $N_u$ such that $\alpha_v$ is equal to the new $\alpha_u$.

**Prove that the concrete algorithm correctly emulates the abstract algorithm.**