8A need a locally fair ranking system based on wins. E = Enrique. R = Ricky

1) set P of all players in the tournament
2) Assume set P is nonempty
3) Set P has greatest element E based on number of wins | Well-Ordered principle
4) Q is ranked first in set P
5) There is a subset of P, Q, in which $E \notin Q$, but $R \in Q$
6) set R is ranked as P in #3.
7) Enrique is ranked 1st, R ranked 2nd

□

Assume no 3-player win chains

8-B

1) 1-player tournament | easy to rank

2) n-player tournament, where $n \geq 1$.
   1) fix P as set of all players
   2) $\exists x$, player x has no losses
      - assumption of no winning chains: someone must be on the top
   3) player x is ranked first in set P
   4) fix Q as subset of all players in P, minus x
   5) $\exists y \in Q$ who is ranked 1st in Q | well-ordered principle
   6) y is ranked after x in set P
   7) rank elements in Q as in P
3) Q.E.D. - fair, locally