Iterated Elimination of Weakly Dominated Actions

Definition

The action $a_i \in A_i$ of player i in the strategic game $\{N, (A_i), (u_i)\}$ is weakly dominated if there is a mixed strategy α_i of player i such that $U_i(\alpha_i, a_{-i}) \geq u_i(a_i, a_{-i})$ for all $a_{-i} \in A_{-i}$ and $U_i(\alpha_i, a_{-i}) > u_i(a_i, a_{-i})$ for some $a_{-i} \in A_{-i}$ where $U_i(\alpha_i, a_{-i})$ is the payoff of player i if he uses the mixed strategy α_i and the other players' vector of actions is a_{-i}.

- Is a weakly dominated action strictly dominated?
- Is a strictly dominated action weakly dominated?
- A weakly dominated action that is not strictly dominated is a best response to some belief.
- Order matters for iterated elimination of weakly dominated strategies.