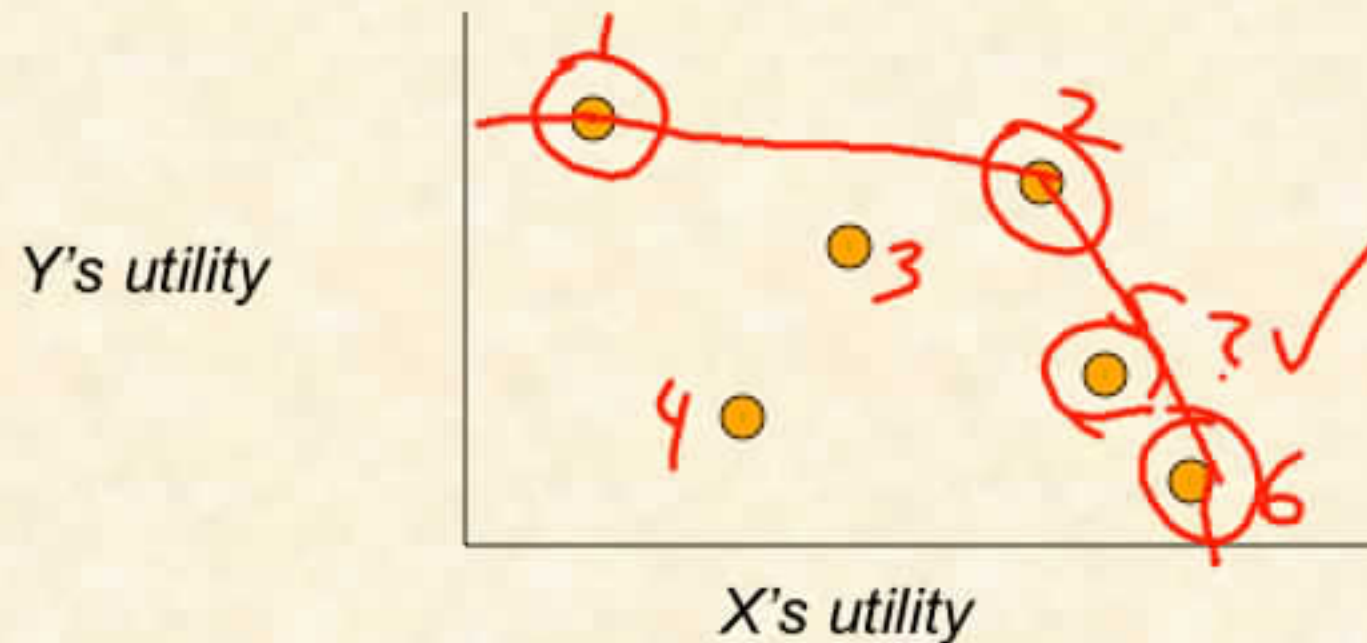♦ S is a **Pareto-optimal** solution iff

- $\forall S' \ (\exists x \ U_x(S') > U_x(S) \rightarrow \exists y \ U_y(S') < U_y(S))$
- i.e., if X is better off in S', then some Y must be worse off

♦ Social welfare, or global utility, is the sum of all agents' utility

- If S maximizes social welfare, it is also Pareto-optimal (but not vice versa)

Y's utility

X's utility

Which solutions are Pareto-optimal?

Which solutions maximize global utility (social welfare)?