Zero-sum Games and Strictly Competitive Games

Lemma

Any strategic game can be translated into a zero-sum game that preserves player preference ordering over outcomes.

Example:

Player 2

		L	R
Player 1	U	3,4	6,1
	D	5,2	4,3

$\Rightarrow$

Player 2

		L	R
Player 1	U	3,−3	6,−6
	D	5,−5	4,−4