A strategy is a list of choices, one for each decision node of that player. Hence the strategies for each player are

Player 1: LW, LE, RW, RE

Player 2: ac, ad, ae, bc, bd, be

This might be unintuitive. Consider strategy LW. If L is played, then the choice between W and E seems irrelevant – that node will not be reached. In such a case, think of W as still being part of the strategy as a *contingency*, just in case that node is reached by some terrible mistake.

The reduced-form then takes all of these strategies and turns it into a payoff matrix. Note that LW and LE rows have the same payoffs. This is a consequence of the seeming redundancy that comes from specifying LW and LE as unique strategies, even though, again, choosing L renders the choice between W and E irrelevant.

	ac	ad	ae	bc	bd	be
LW	<b>2</b> , <b>1</b>	2, <b>1</b> 2, <b>1</b> 3, <b>2</b> 3, 2	<b>2</b> , <b>1</b>	<b>4</b> , 0	<b>4</b> , 0	<b>4</b> , 0
LE	$oldsymbol{2}, oldsymbol{1}$	2, <b>1</b>	<b>2</b> , <b>1</b>	${\bf 4}, 0$	${\bf 4}, 0$	${\bf 4}, 0$
RW	<b>2</b> , 0	<b>3</b> , <b>2</b>	1, <b>2</b>	2,0	3, <b>2</b>	1, <b>2</b>
RE	<b>2</b> , 0	${\bf 3}, 2$	$0, {\bf 3}$	2,0	3, 2	$0, {\bf 3}$

The pure-strategy Nash equilibria are: (LW, ac), (LW, ae), (LE, ac), (LE, ae), (RW, ad). Now for backward-induction. Start by comparing terminal nodes.

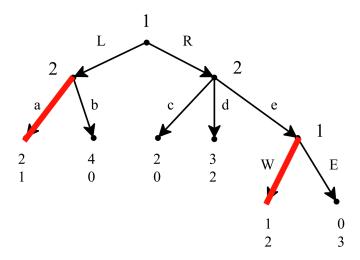


FIGURE 1: Player 2 would rather play a than b because 1 > 0; and Player 1 would rather play W than E because 1 > 0.

The R node for Player 2 is key, because playing either d or e is rational for Player 2 (because 2 > 0). Hence we consider both cases separately.

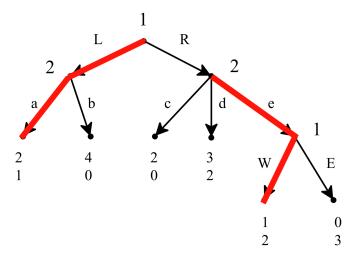


FIGURE 2: Suppose Player 2 plays e. Then it is rational for Player 1 to choose L because 2 > 1. Hence one backward-induction solution is (LW, ae).

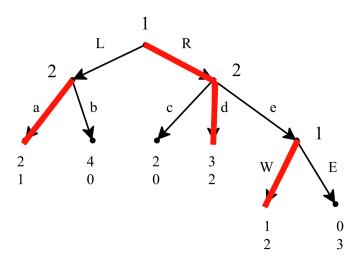


FIGURE 3: Suppose Player 2 plays d. Then it is rational for Player 1 to choose R because 3 > 2. Hence the other backward-induction solution is (RW, ad).

Note that every backward-induction solution of a perfect-information game is a Nash equilibrium of the associated strategic form; but not all Nash equilibria are backward-induction solutions. Hence we can consider backward-induction solutions to be a *refinement* of Nash equilibrium. The Nash equilibria that are not backward-induction solutions are not *credible*. For example, (LW, ac) is not credible because Player 2 would never choose c if Player 1 were to choose W.