Example game: description

Two students are working in a team. Each can either work or be lazy. Each student can produce work worth 20 marks (i.e. the total is 40 marks). Each student incurs a private cost of 30 marks when working and 0 marks when being lazy.

We defined this together yesterday as a strategic form game!

Example game: table

		Student 2	
		W	L
Student1	W	(10, 10)	(−10, 20)
	L	(20, −10)	(0, 0)

Finding the best strategy

- technique: Elimination of dominated strategie
- for student 1, being lazy *dominates* working
- i.e. whatever student 2 does, the payoff of student 1 will be higher is he's lazy
- given that knowledge, it's best for student 2 to also be lazy

Therefore: (l, l) is the *dominant strategy* profile.

Example 2

		Player 2	
		B1	B2
Player 1	A1	(1, 3)	(4, 1)
	A2	(0, 2)	(3, 4)

What is the best strategy profile?

Example 3

		Player 2	
		B1	B2
Player 1	A1	(−1, 3)	(2, 1)
	A2	(0, 2)	(3, 4)

What is now the best strategy profile?

Example 4

		Player 2	
		B1	B2
Player 1	A1	(1, 3)	(3, 1)
	A2	(2, 2)	(0, 4)

What about this time?

Problems finding a solution

The elimination of dominated strategies technique suffers from the fact that it is not always the case that t can produce a "solution"

This is precisely the reason why other solution concepts have arisen which are more popular. The best one of those is the famous *Nash equilibrium*!

Nash equilibrium

Definition: A Nash equilibrium is a strategy profil
such that each player's strategy is an optimal
response to the other players' strategies

A Nash equilibrium is said to be *strict* if each playe
has a unique best response to his rivals' strategies.

Properties of NE

- if all players predict that a Nash equilibrium will occur, there is no incentive for any player to play differently (deviate)
- the NE concept assumes that the players are rational
- strategy profiles that are found though domainance elimination are in Nash equilibria