

## Non-zero Sum 2x2 Game (2019)

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The 2x2 game between two players, Row and Column (Figure 1), seems typical of such two-player matrix games. The entry  $(-3, 2)$  refers to the fact that if Row plays Row 2 and Column plays Column 1, then Row loses 3 and Column gains 2. Since  $(-3) + 2$  is not zero this means that this game is not a zero-sum game.

	Column I	Column II
Row 1	(4, -1)	(-2, 2)
Row 2	(-3, 2)	(3, -1)

Figure 1 (A non-zero sum game)

Every time the game is played Row can have one of 4 possible outcomes as a payoff (4, -2, -3 or 3) while Column can have one of two possible outcomes as a payoff (-1 or 2)

Questions:

1. What advice would you give to the players of this game about how to play "optimally?"

Comment: You might want to compute all the Nash equilibria for this game to answer this question.

2. Do any aspects of this game come as a surprise?