Weekly Assignment 1

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Introduction to game theory

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1) Each of two players announces an integer between 0 and 100. Let a_1 be the announcement of Player 1 and a_2 be the announcement of Player 2. The payoffs are determined as follows:

- If $a_1 + a_2 \leq 100$: Player 1 receives a_1 and Player 2 receives a_2;
- If $a_1 + a_2 > 100$ and $a_1 > a_2$: Player 1 receives $100 - a_2$ and Player 2 receives a_2;
- If $a_1 + a_2 > 100$ and $a_1 < a_2$: Player 1 receives a_1 and Player 2 receives $100 - a_1$;
- if $a_1 + a_2 > 100$ and $a_1 = a_2$: Both players receive 50. Solve this game with iterated elimination of dominated strategies.

2) Find Nash Equillibrium in the following example:

		P2				
		V	W	X	Y	Z
P1	A	$4, -1$	$4, 2$	$-3, 1$	$-1, 2$	$-2, 0$
	B	$-1, 1$	$2, 2$	$2, 3$	$-1, 0$	$2, 5$
	C	$2, 3$	$-1, -1$	$0, 4$	$4, -1$	$0, 2$
	D	$1, 3$	$4, 4$	$-1, 4$	$1, 1$	$-1, 2$
	E	$0, 0$	$1, 4$	$-3, 1$	$-2, 3$	$-1, -1$