HOMEWORK # 1 ANSWERS

1. **(a)** The game is as follows:

		Player 2								
		D			E			F		
Player 1	A	6	3	0	3	1	2	0	0	4
	B	8	0	0	4	4	0	1	2	4
	C	9	3	2	0	1	1	5	0	0

Player 3: G

		Player 2								
		D			E			F		
Player 1	A	0	0	1	2	3	3	6	2	6
	B	4	5	1	8	4	2	7	0	5
	C	9	0	4	0	1	2	2	0	1

Player 3: H

(b) For Player 1 *A* is strictly dominated by *B*. For Player 2 *F* is strictly dominated by *E*. For Player 3 *G* is strictly dominated by *H*.

(c) After deleting *A*, *F* and *G* we are left with the following reduced game.

		Player 2					
		D			E		
Player 1	B	4	5	1	8	4	2
	C	9	0	4	0	1	2

Player 3: G

In the above game there are no strictly dominated strategies. Thus the outcome of the IDSDS procedure is the set of strategy profiles {(*B*,*D*,*G*), (*B*,*E*,*G*), (*C*,*D*,*G*), (*C*,*E*,*G*)}.

(d) There are no Nash equilibria.

2. **(a)** For $x < 3$. The strictly dominant strategy is C.

(b) For $x = 3$. The weakly dominant strategy is C.

(c) No (if $y \leq 2$ *G* weakly dominates *H*, however, *G* does not dominate *F*, etc.).

(d) (C,F), (C,G) and (C,H).

(e) (C,G) and (C,H).

(f) In the first round A, B and E are eliminated. In the second round F is eliminated. In the third round D is eliminated and in the last round G is eliminated. Thus the outcome of the IDSDS procedure is (C,H).