

**Q1**

The protocol to represent a two player game is as follows:

(space separated)

The first line should contain two numbers  $n, m$  where  $n$  denotes the number of strategies of player 1 and  $m$  denotes the number of strategies of player 2.

The next line should be left empty.

The next  $n$  lines contain  $m$  space separated integers each. The  $j^{\text{th}}$  number of the  $i^{\text{th}}$  line represents the utility of player 1 when the player 1 plays strategy  $i$  and player 2 plays strategy  $j$ .

The next line should be left empty.

The next  $n$  lines contain  $m$  space separated integers each. The  $j^{\text{th}}$  number of the  $i^{\text{th}}$  line represents the utility of player 2 when the player 1 plays the strategy  $i$  and player 2 plays strategy  $j$ .

Q4 The utility matrix is as shown:

Player 1, Player 2	Strategy 1	Strategy 2	Strategy 3
Strategy 1	2, <span style="border: 1px solid black;">2</span>	2, 1	<span style="border: 1px solid black;">2</span> , 0
Strategy 2	<span style="border: 1px solid black;">3</span> , 0	<span style="border: 1px solid black;">4</span> , <span style="border: 1px solid black;">1</span>	1, <span style="border: 1px solid black;">1</span>
Strategy 3	<span style="border: 1px solid black;">3</span> , <span style="border: 1px solid black;">1</span>	1, <span style="border: 1px solid black;">1</span>	1, <span style="border: 1px solid black;">1</span>

The boxed values of a player correspond to the best responses of the player when the strategy of the other player is fixed.

Note that the strategies ~~corresponding to~~ profiles which are best responses for both the players are the Nash equilibria. Thus for the above game, the Nash equilibria are;

Player 1 plays Strategy 3 and Player 2 plays Strategy 1

Player 1 plays Strategy 2 and Player 2 plays Strategy 2