

$$\begin{aligned}
 (a) \quad & \begin{bmatrix} (0,0) & (-3,1) \\ (1,-3) & (-1,-1) \end{bmatrix} & (b) \quad & \begin{bmatrix} (1,-1) & (-1,1) \\ (-1,1) & (1,-1) \end{bmatrix} \\
 (c) \quad & \begin{bmatrix} (3,1) & (0,0) \\ (0,0) & (1,3) \end{bmatrix} & (d) \quad & \begin{bmatrix} (10,0) & (5,2) \\ (10,1) & (2,0) \end{bmatrix} \\
 (e) \quad & \begin{bmatrix} (2,10) & (1,0) & (1,3) \\ (0,0) & (0,10) & (5,3) \end{bmatrix} & (f) \quad & \begin{bmatrix} (4,3) & (2,7) & (0,4) \\ (5,5) & (5,-1) & (-4,-2) \end{bmatrix} \\
 (g) \quad & \begin{bmatrix} (1,1) & (0,0) & (0,0) \\ (0,0) & (1,1) & (0,0) \\ (0,0) & (0,0) & (1,1) \end{bmatrix} & (h) \quad & \begin{bmatrix} (1,1) & (0,0) & (0,3) \\ (0,0) & (1,1) & (0,0) \\ (3,0) & (0,0) & (1,1) \end{bmatrix} \\
 (i) \quad & \begin{bmatrix} (0,0) & (-1,1) & (1,-1) \\ (1,-1) & (0,0) & (-1,1) \\ (-1,1) & (1,-1) & (0,0) \end{bmatrix} & (j) \quad & \begin{bmatrix} (2,0) & (3,2) & (4,2) & (5,3) \\ (3,2) & (1,1) & (3,1) & (4,2) \\ (2,2) & (1,6) & (3,7) & (4,10) \\ (2,-1) & (2,8) & (4,6) & (2,1) \end{bmatrix}
 \end{aligned}$$

5. As the parameter 'a' varies explain how the set of Nash equilibria for the game below alters.

$$\begin{bmatrix} (3,2) & (a,a) \\ (0,0) & (2,3) \end{bmatrix}$$

6. Consider the following Bayesian game. Player 1 is a buyer with a value for the good v that is distributed $U(0,1)$. And Player 2 is a seller with a use value of the good c that is distributed $U(0,1)$. They each have 2 actions trade or no trade. When trade occurs it is arranged by an intermediary at the average of the two values. Hence, they play the following game.

		Seller	
		Trade	No trade
Buyer	Trade	$(v - \frac{1}{2}(v+c), \frac{1}{2}(v+c)-c)$	$(0,0)$
	No Trade	$(0,0)$	$(0,0)$

Assume they follow cut-off strategies so that low value buyers do not trade and high cost sellers do not trade. Find a Bayes-Nash equilibrium.