

1. Describe the replicator dynamics for the game defined by the matrix

$$A = \begin{pmatrix} 0 & -1 & 2 \\ 1 & 0 & -4 \\ 1 & -20 & \end{pmatrix}.$$

2. Describe the best-response dynamics for the game defined by the same matrix $A = \begin{pmatrix} 0 & -1 & 2 \\ 1 & 0 & -4 \\ 1 & -2 & 0 \end{pmatrix}$.

3. Describe how the replicator dynamics for the game defined by the matrix $A = \begin{pmatrix} -2 & -2 & 3 \\ 0 & 0 & 0 \\ -2 - a & -1 & 3 \end{pmatrix}$ changes as the parameter a varies.

4. Give an example of a replicator dynamics where an asymptotically stable equilibrium state is not an evolutionary stable strategy.