Problem 1: Games and their dynamics. This question has two main parts: the first concerns dominated strategies, the second concerns the replicator dynamics.

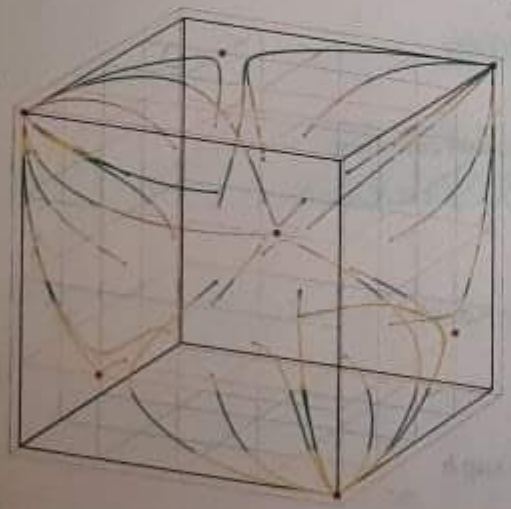
(Q1) Consider the bimatrix game given below:

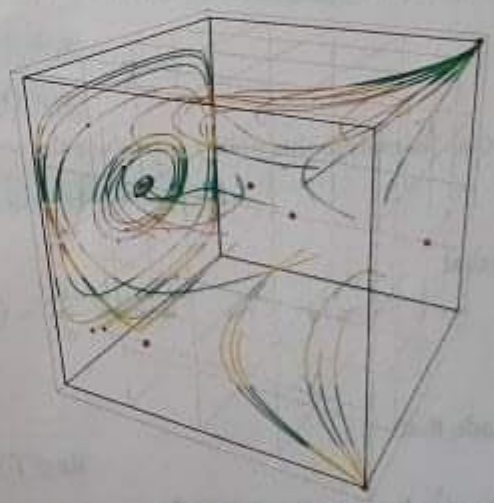
$(25,-1)$	$(25,-1)$	$(-2,0)$	$(-2,20)$	$(-3,19)$
$(15,1)$	$(2,2)$	$(2,5)$	$(12,0)$	$(2,3)$
$(20,1)$	$(15,-1)$	$(0,2)$	$(4,-1)$	$(0,4)$
$(1,-33)$	$(-3,43)$	$(-1,10)$	$(1,-6)$	$(-1,12)$
$(0,0)$	$(1,-13)$	$(-1,15)$	$(-2,-5)$	$(-3,20)$

Perform the procedure of iterated elimination of dominated strategies. Is the game dominance-solvable?

[6 points]

(Q2) Each of the diagrams below represents a phase portrait for the replicator dynamics in a $2 \times 2 \times 2$ game.





In each diagram, Nash equilibria have been marked with a red dot (there are 7 Nash equilibria in each game). For each equilibrium, indicate:

(a) If it is Lyapunov stable.

(b) If it is asymptotically stable.

[14 points]