Assignment on Correlated Equilibrium

CE1.
    Given the following bimatrix game

$(4,4)$	$(1,6)$
$(6,1)$	$(-3,-3)$

Find the correlated equilibrium that maximizes the expected sum of the two players' payoffs.

CE2.
Given the following bimatrix game

$(6,6)$	$(2,7)$
$(7,2)$	$(0,0)$

(i)   Find all SEs using Tetraskelion method. Show that the payoff vectors of the SEs are (2,7), (7,2), (14/3, 14/3).
(ii)   Show that there exists a correlated equilibrium such that its payoff vector is outside the convex hull of the payoff vectors of the three SEs in (i).

CE3.
For the following 2x3 game, find a CE which does not come from a SE.

$(6,6)$	$(2,7)$	$(3,5)$
$(7,2)$	$(0,0)$	$(8,1)$

CE4.
Let [A, B] be a bimatrix game such that both A and B are diagonal matrices with nonnegative diagonal entries. Show that any diagonal matrix (p_{ij}) such that $p_{ij} \geqq 0$, $\sum_{i,j} p_{ij} = 1$, is a CE.