Problem Set 4: Game Theory Under Uncertainty

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1. Bayes Law

A married woman is found dead. Suppose that 80% of married women who are murdered are murdered by their husbands. Suppose, in addition, that evidence is found on the scene that would have an 80% chance of being found if the husband did it, but only a 15% chance of being found if he did not. How probable is it that this woman was murdered by her husband? What if there is only a 5% chance of the evidence being found if the husband is innocent?

2. Mixed Strategy Equilibrium

In each of the following games, find all of the pure strategy Nash equilibria, determine whether or not there is a mixed strategy Nash equilibrium, and if so, what it is.

a)

	L	R
U	1,1	-1,100
D	100,-1	0,0

b)

	L	R
U	3,2	0,0
D	0,0	2,3

c)

	L	R
U	4,2	3,5
D	2,4	4,2