Stat/Econ 473 Game Theory
Problem Set 8

Due: Thursday November 2 :

From the Text: Do problems: Chapter 10: 20, Chapter 11: 4, 5

1) Consider a two player game of chicken. Each player has two possible types they are either crazy or sane. We call these types 1C, 1S, 2C, 2S. Each player knows their own type. We have the following common prior probability distribution on types

	2C	2S
1C	.1	.4
1S	.2	.3

For example, this means the probability that 1 is sane and 2 is crazy is .2 and the probability that probability that both are sane is .3.

Each player decides wheter to be aggressive or passive.

Player type	Player's action	Opponent's action	Payoff
Crazy	A	A	0
Crazy	A	P	5
Crazy	P	A	-10
Crazy	P	P	-5
Sane	A	A	-10
Sane	A	P	5
Sane	P	A	-5
Sane	P	P	0

So for, example if 1C plays A and 2S plays P the payoff is 5 for Player 1 and -5 for Player 2.

a) Right down the four payoff matricies for the game where each type of Player 1 plays against each type of Player 2.

b) Calculate the posterior probabilities: $Pr(2C|1C)$, $Pr(2C|1S)$, $Pr(1C|2C)$ and $Pr(1C|2S)$.

c) Does either type of either Player have a strictly dominant strategy? Explain.

d) Find all pure strategy Bayes-Nash equilibria.