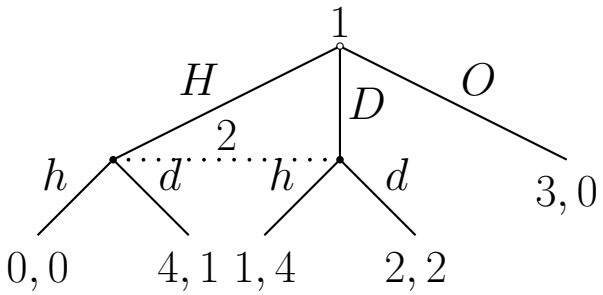
Written answers are acceptable so long as they are legible. Remember, you can work with others but you must write the answers on your own. IF YOU WORK WITH OTHERS YOU MUST NOTE WITH WHOM YOU WORKED IN YOUR ANSWER.

Problem 1

Consider the following game:

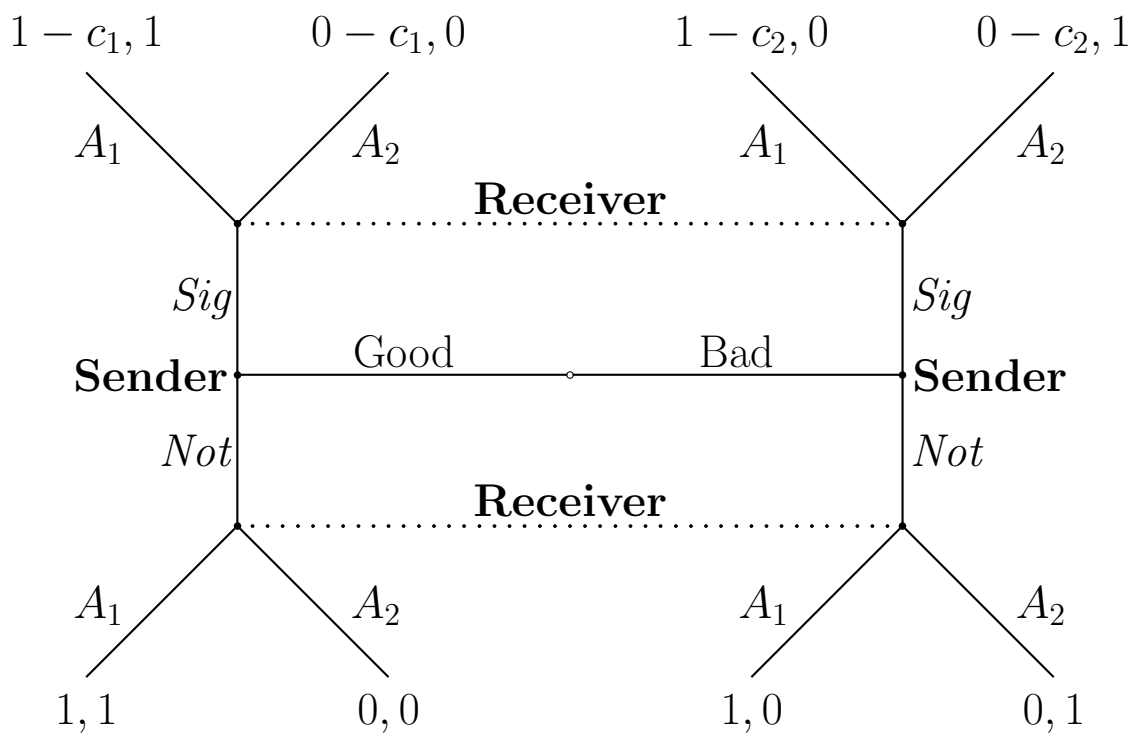


Find all the pure strategy sequential equilibria. Remember, sequential equilibria are both strategy profiles and belief profiles, you must give both.

Problem 2

Recall the partial conflict of interest signaling game.

Problem 2 continued on next page. . .



Suppose that c_1 and c_2 are too low to make signaling an equilibrium, i.e. $1 > c_2 > c_1$. Also suppose that the probability of being good, which we'll call p, is less than $1/2$. There is a mixed strategy Nash equilibrium where the sender mixes between the strategies "Always send the signal" and "Send signal only if good"; and where the receiver mixes between "Always take action A_2" and "Take action A_1 only if the signal is sent, A_2 otherwise."

What are the probabilities used by the sender and the receiver in this mixed equilibrium? They might depend on the values of c_1, c_2, and p.

Problem 3

Recall the game of chicken (here the strategies are named "hawk" and "dove"):

	H	D
H	0, 0	3, 1
D	1, 3	2, 2

Consider the indefinitely repeated game of chicken with a probability of continuing given by δ. Strategy **ALT-H** alternates between H and D every round (starting with H) so long as the other player does the opposite action. If a player deviates and fails to do the opposite action, then **ALT-H** plays H forever. Strategy **ALT-D** is exactly the same, except it starts with D and alternatives D and H.

Is the pair (**ALT-H**, **ALT-D**) ever a Nash equilibrium in the repeated game (that is for any value of δ)? Show how you got your answer. Does its existence depend on δ?