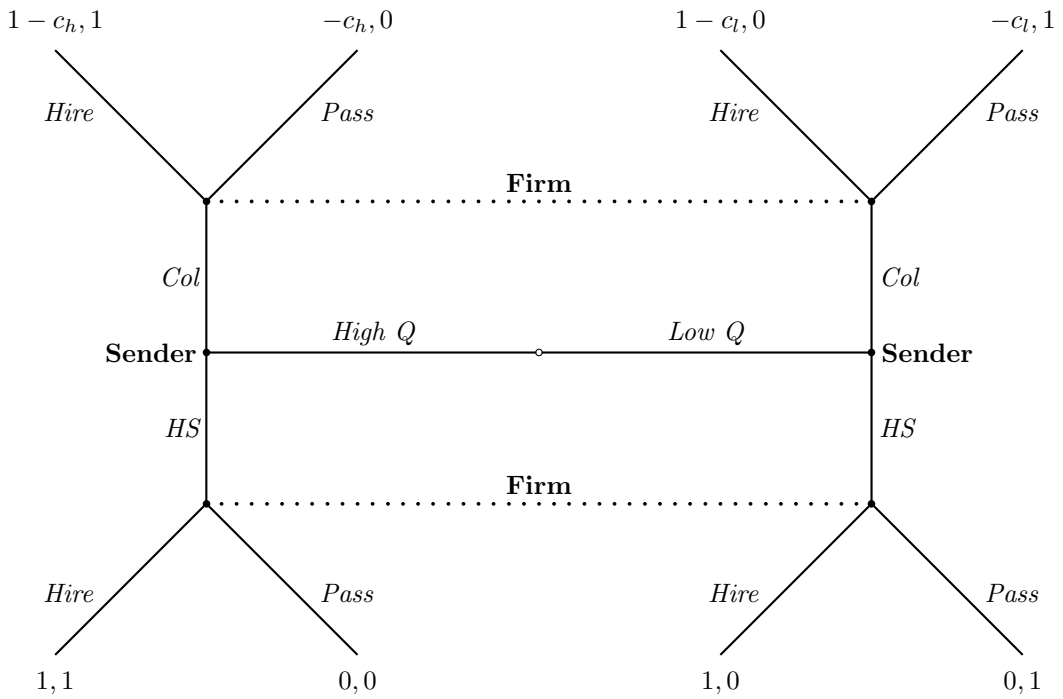
Part 1

This part will focus on the differential cost game we discussed in class.



Problem 1

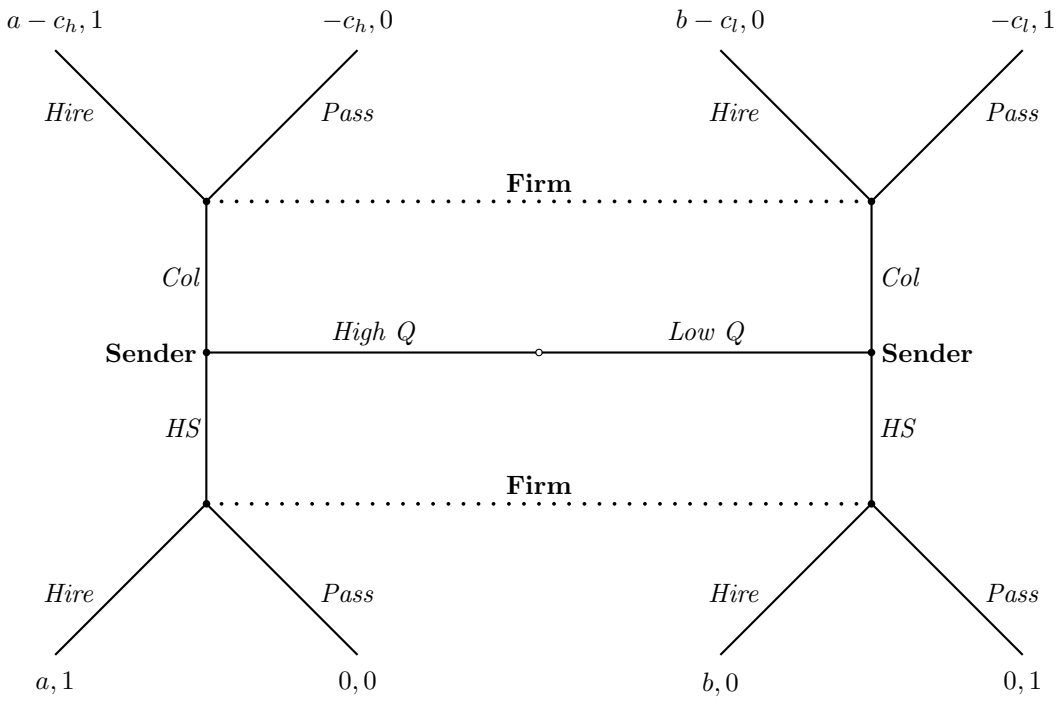
Suppose that the worker is equally likely to be high or low quality and that the $c_l > 1 > c_h > 0$. What are all the Nash equilibria of this game?

Problem 2

Using the same conditions in the last problem, what are the stability properties of the various Nash components in the two-population replicator dynamics?

Part 2

In this part consider the combination game which features both differential cost and differential benefit



Problem 3

Suppose that the High-Quality type is rare (less than probably 0.5). What are the conditions necessary for the existence of the separating equilibrium? What about the hybrid equilibrium?

Problem 4

Consider the face of simplex on which the hybrid equilibrium resides. Write down the matrix for this 2x2 game. Is it qualitatively like matching pennies (as the differential cost and benefit games are)?

Problem 5

Consider the hybrid equilibrium against mutations toward the interior of the state space. Is the hybrid equilibrium stable in the same way?