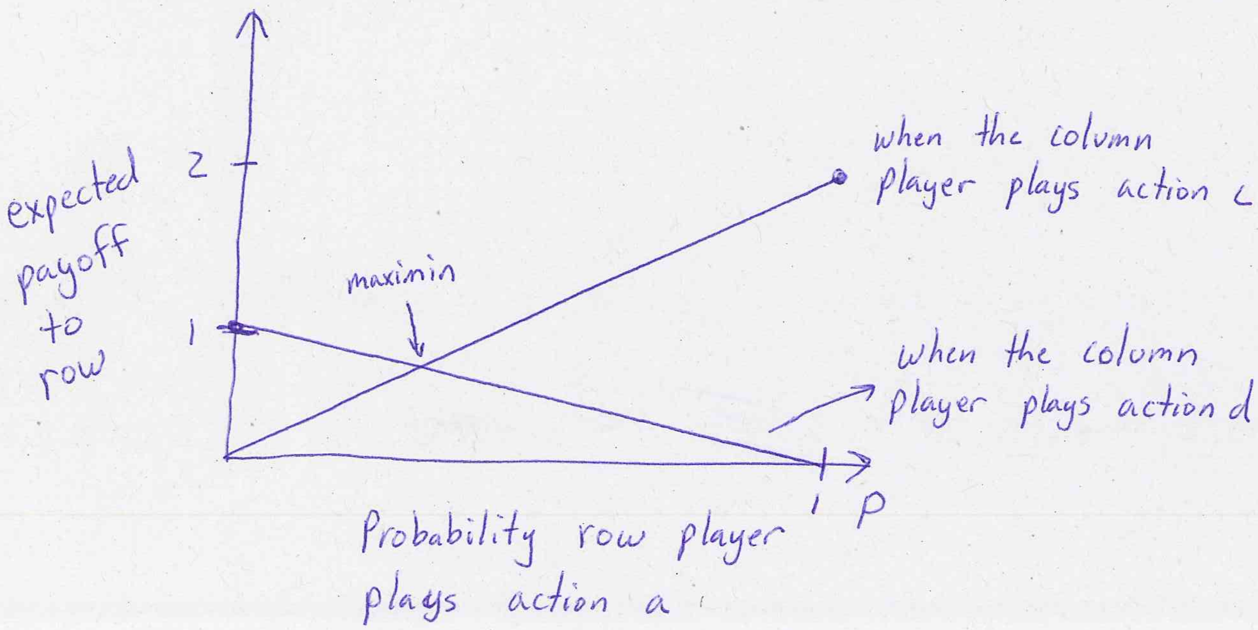
Solutions to homework #2

First game:

	c	d
a	2, 2	0, 0
b	0, 0	1, 1

Compute the maximin strategy for the row player



Set the two lines equal to each other and solve for p

$$2p + 0(1-p) = 0p + 1(1-p)$$
$$2p = 1-p$$
$$p = 1/3 \Rightarrow \text{maximin strategy for the row player: } (1/3, 2/3)$$

Maximin value: $2(1/3) = 2/3$

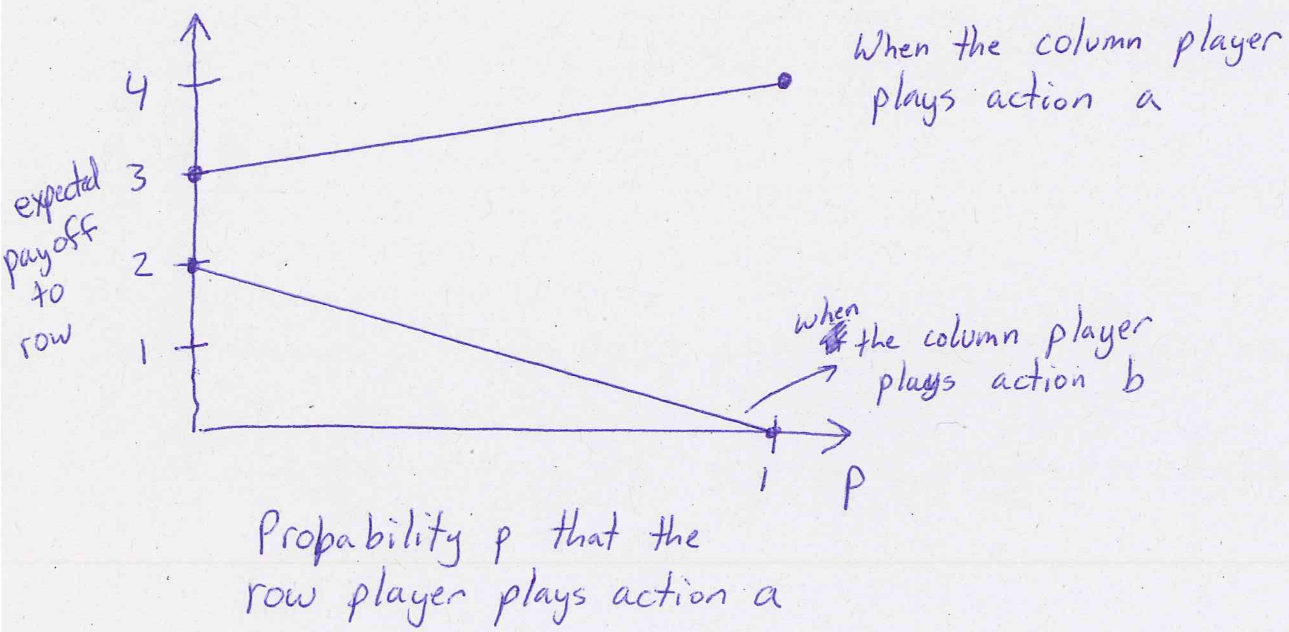
We use the same technique to compute the maximin strategy and value for the column player.

Since the game is symmetric, the maximin strategy and value for the column player is the same as for the row player.

Second game:

	a	b
a	4,4	0,3
b	3,0	2,2

Compute the maximin strategy for the row player



The lines never intersect in the range $p \in [0,1]$. Therefore regardless of the row player's strategy, the column player always makes the row player's payoff the lowest when it plays b. Thus, the row player maximizes its minimum expected payoff when $p=0$ (always plays b). Thus, the maximin strategy for the row player is:

$(0,1) \rightarrow$ always play b

Maximin value: 2

The game is symmetric, so the maximin value and strategy are the same for the column player