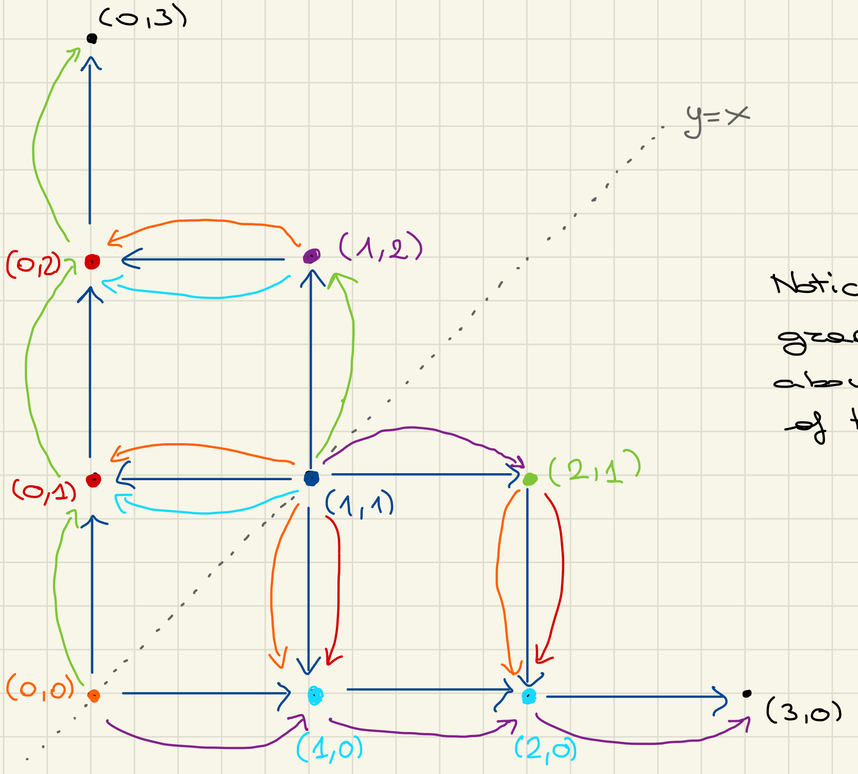

Notice that the graph is "symmetric" about the line $y=x$ of the xy-plane.

At the beginning we distribute m chips to all nodes:

$$\mathbb{P}(\text{ node } (a,b) \text{ has } k \text{ chips}) = \mathbb{P}\left(\mathrm{Bin}\left(m, \binom{3}{a,b} p^a (1-p)^b q^{m-(a+b)} (1-q)^{a+b}\right) = k\right)$$

We say that a node is empty if there are no chips on such a node.

At each round we sample two random nodes with replacement according to a law π (where π gives probability 0 to empty nodes). Let us call x and y the two selected nodes. If X has an outedge of the same color of Y and Y has an out-edge of the same color of X then:

- if $X \neq Y$ and they are not empty, then a chip is moved from X to its chied connected to X using the out-edge of the same color of Y. Similarly a chip is moved from Y to its chied connected to Y using an out-edge of the same color of X.

- if $X = Y$ and there are at least 2 chips on X, we repeat the same procedure as above.

- otherwise, we do nothing.

The procedure stops when one of the following occurs:

- there are chips only on the x-axis and y-axis.

- there are chips on the x-axis, on $(0,3)$ and $(2,1)$, that is strictly below $y=x$ and on $(0,3)$.

- there are chips on the y-axis, on $(3,0)$ and $(1,2)$, that is strictly above $y=x$ and on $(3,0)$.

ANOTHER WAY TO CONSIDER THE DYNAMICS WITH SAME OUTCOME

Consider the following dynamics: at each round we sample a node X with law $\tilde{\pi}$.

- If X is empty, sample again
- if X is not empty, sample an out-edge of X and call Y the node of the same color of the outedge. Then:

  - if $X \neq Y$ and Y is not empty, X gives a chip to its chied connected to X with the outedge of the same color of Y. Similarly Y gives a chip to its chied connected to Y with the outedge of the same color of X.

- if $x=y$ and y has at least 2 chips, we do the same as above
- otherwise we do nothing.

The stopping conditions are the same as before.