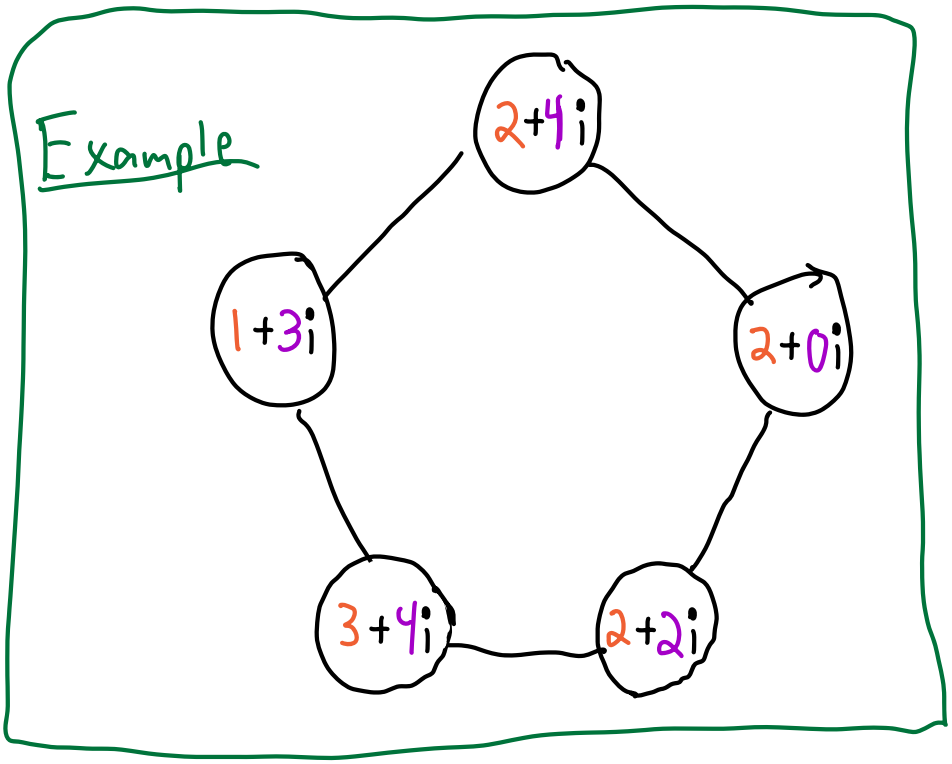
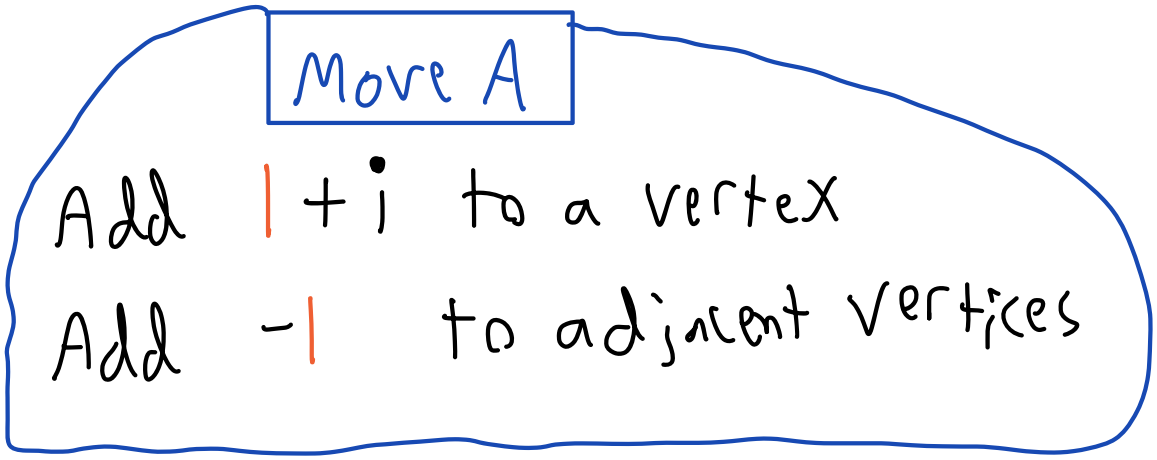
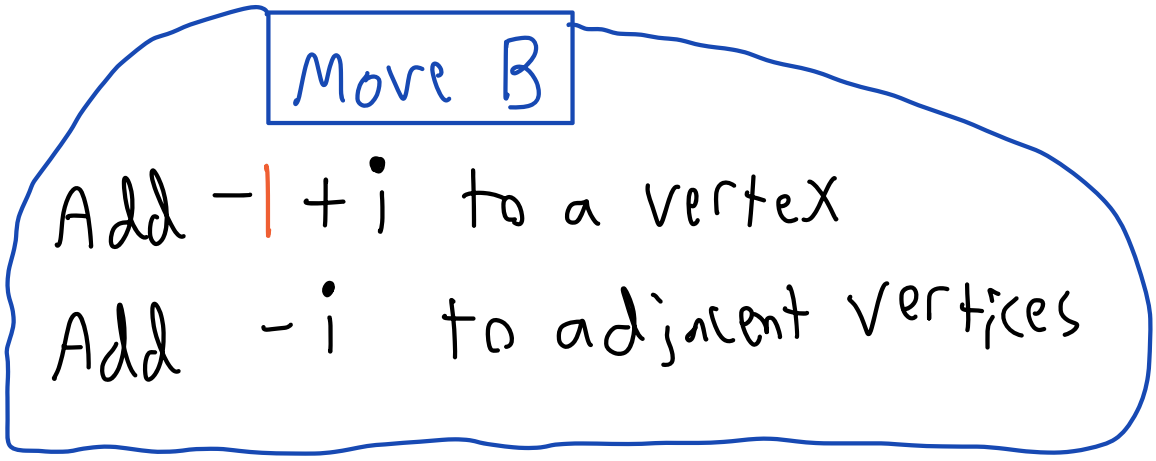
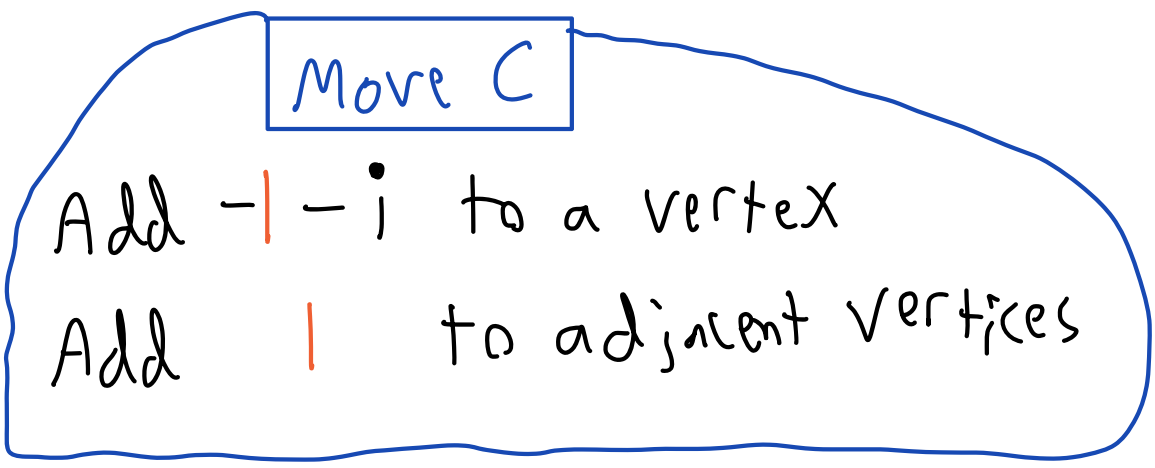
We have a fixed pentagon where each vertex contains a number in $\mathbb{Z}[i]$ (i.e., of the form $a+bi$ for integers a and b.) In practice, we can restrict the values of a and b. I think having each coefficient from 0 to 4 might work well.

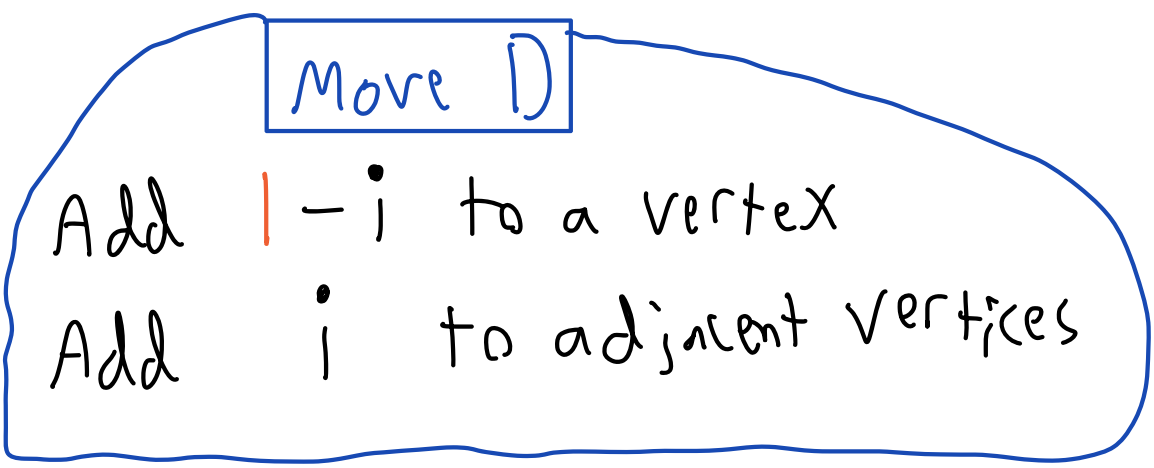


There are a few different "firing moves" that can be done to change the numbers on the vertices. Each move impacts 3 adjacent vertices, and the differ by multiplication by i.

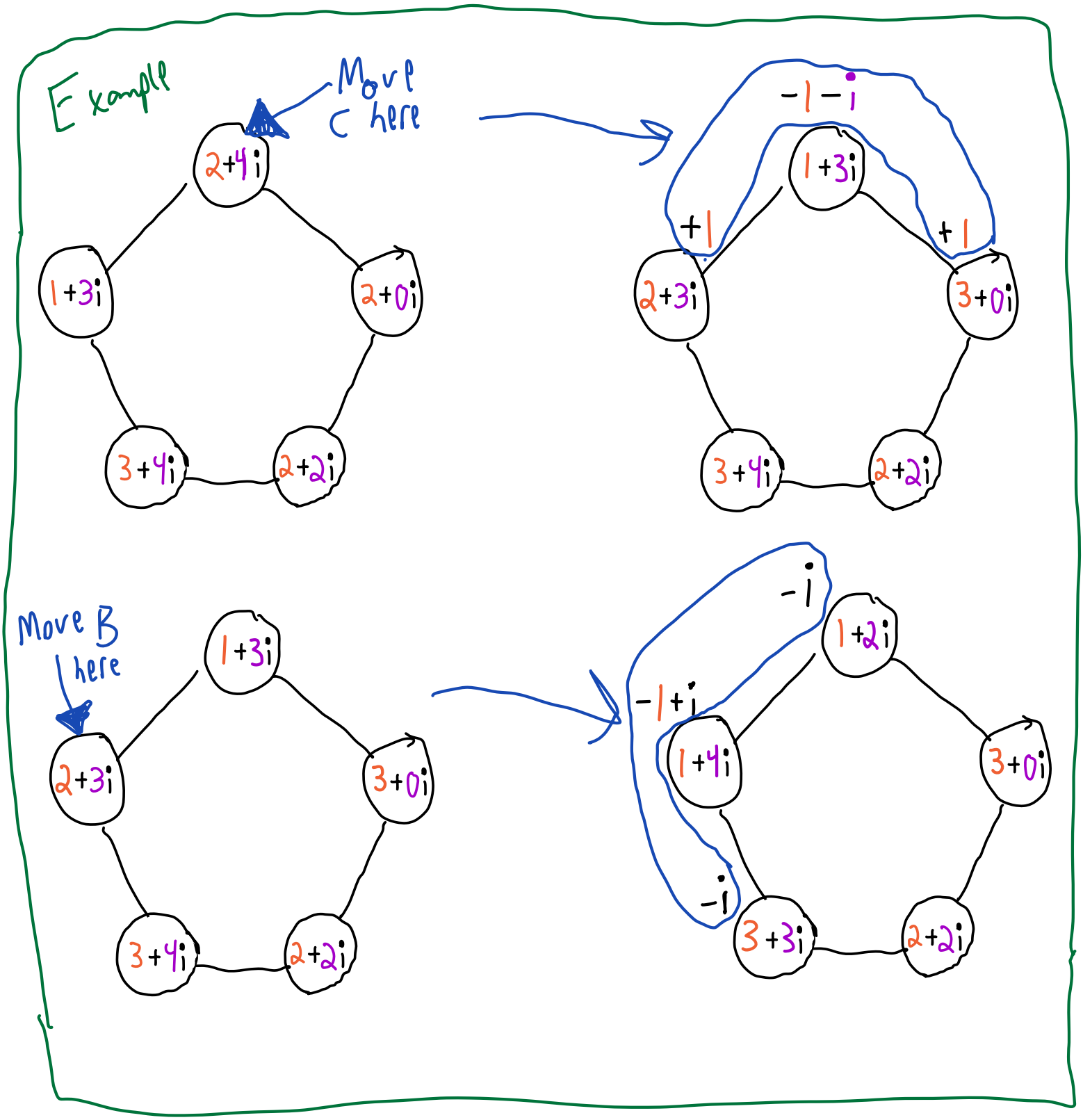

Move A
Add |+i to a vertex
Add -| to adjacent vertices


Move B
Add -|+i to a vertex
Add -i to adjacent vertices


Move C
Add -|-i to a vertex
Add | to adjacent vertices


Move D
Add |-i to a vertex
Add i to adjacent vertices

Note that move A is the negation of move C and move B is the negation of move D.



Implementation idea

A button (e.g. Shift) switches between Move A and Move B. Left click on a vertex to add, right click to subtract. Note that this means that right clicking gives Move C or Move D.

So far it's only technically a "game", but it would be great for research

Game Time

Challenge: Get to a "goal configuration"

Important Note:
Not every Configuration can be reached!

To be precise, I think that there are 162 orbits

The easiest way to come up with a "goal Configuration" is to have the computer make a bunch of moves at random.

Stretch goal: Instead of one "goal Configuration", we could have a few from different orbits (I can work out the math to guarantee this). Part of the challenge is deciding which one to go for.

Stretch goal 2: Multiplayer! Basically, who can get to their goal configuration first.