The graph for this assignment was implemented as a new, custom user program titled “graph”. It forks three child processes, giving each tickets in a 3:2:1 ratio, and then sets them to spin for awhile while the parent waits for them to finish. After, the children pipe their usage statistics to the parent, which analyzes their runtimes and outputs the info to the console.

The algorithm is imperfect – there is a bias towards lower winning numbers at the beginning of the OS lifecycle, however as the program is run it becomes more accurately dispersed. I have included three runs below, though you are welcome to run the “graph” program inside of xv6 yourself.