

Problem 1

Two summers ago, I implemented an n -dimensional Markov Chain which eventually converged to its stationary distribution when n was high enough and I also verified this by finding the stationary distribution of the Markov Chain. In addition, I also created a four page reference sheet for linear algebra here <https://github.com/dannykliu/reference-sheets/blob/master/linear-algebra.pdf>.

Problem 2

- 1) In spherical coordinates $r = 1$ expresses the unit sphere.
- 2) In cylindrical coordinates $r^2 + z^2 = 1$ also express the unit sphere.