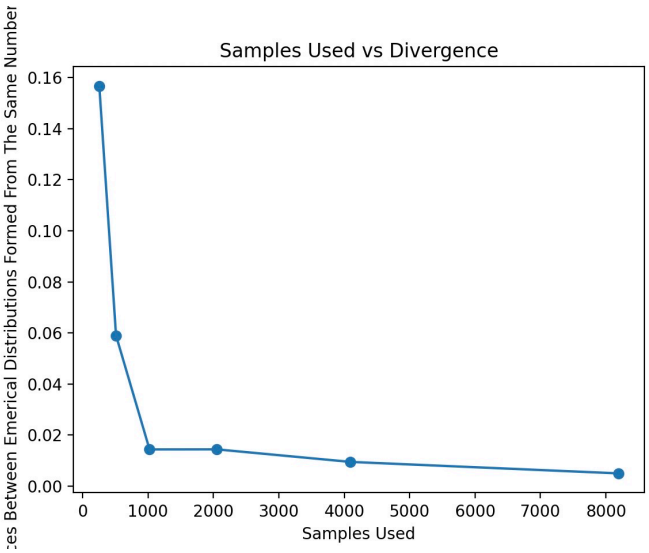
6.380 Lab #5

part a)



part b)

Run 1

```
0.005258: /wiki/Standard deviation
0.005129: /wiki/Questionnaire
0.005108: /wiki/Regression analysis
0.005072: /wiki/Descriptive statistics
0.005053: /wiki/Crime statistics
0.005012: /wiki/Likelihood function
0.004899: /wiki/Generalized linear model
0.004713: /wiki/Posterior probability
0.004545: /wiki/Bayesian linear regression
0.004498: /wiki/Bayesian inference
0.004335: /wiki/Credible interval
0.004321: /wiki/Ordinary least squares
0.004231: /wiki/Bayes factor
0.004205: /wiki/Bayesian probability
0.004166: /wiki/Logistic regression
0.004162: /wiki/Errors and residuals in statistics
0.004162: /wiki/Geographic informationsystem
0.004152 : /wiki/Econometrics
0.004114 : /wiki/Time series
0.004084 : /wiki/Geostatistics
```

Run 2

```
0.005279: /wiki/Standard deviation
0.005131: /wiki/Questionnaire
0.005114: /wiki/Regression analysis
0.005086: /wiki/Descriptive statistics
0.005045: /wiki/Likelihood function
0.005014: /wiki/Crime statistics
0.004958: /wiki/Generalized linear model
0.004725: /wiki/Posterior probability
0.004544: /wiki/Bayesian linear regression
0.004468: /wiki/Bayesian inference
0.004342: /wiki/Credible interval
0.004314: /wiki/Ordinary least squares
0.004257: /wiki/Bayes factor
0.004192: /wiki/Bayesian probability
0.004163: /wiki/Logistic regression
0.004152: /wiki/Geographic information system
0.004150: /wiki/Errors and residuals in statistics
0.004141: /wiki/Econometrics
0.004126: /wiki/Time series
0.004092: /wiki/Prior probability
```

Run 3

```
0.005253: /wiki/Standard deviation
0.005142: /wiki/Questionnaire
0.005123: /wiki/Regression analysis
0.005078: /wiki/Descriptive statistics
0.005051: /wiki/Crime statistics
0.005009: /wiki/Likelihood function
0.004922: /wiki/Generalized linear model
0.004711: /wiki/Posterior probability
0.004523: /wiki/Bayesian linear regression
0.004489: /wiki/Bayesian inference
0.004315: /wiki/Credible interval
0.004293: /wiki/Ordinary least squares
0.004259: /wiki/Bayes factor
0.004187: /wiki/Logistic regression
0.004180: /wiki/Geographic information system
0.004176: /wiki/Bayesian probability
0.004163: /wiki/Econometrics
0.004153: /wiki/Time series
0.004149: /wiki/Errors and residuals in statistics
0.004107: /wiki/Geostatistics
```

→ the ones in common are highlighted

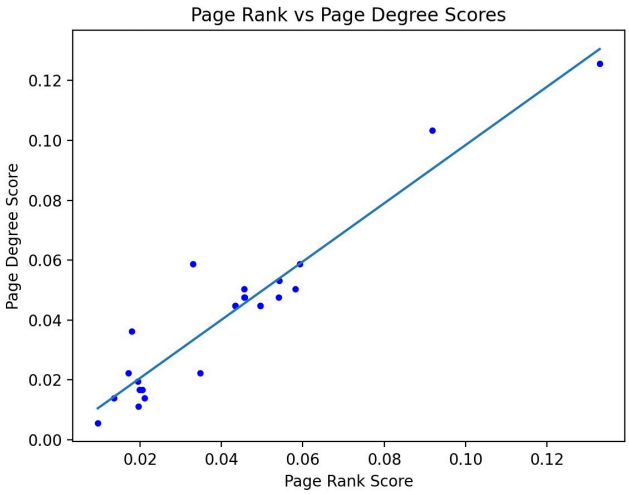
part c)

(i) No. There could be pages with 0 links or one component to the other but not the other way around which is most likely the case

(ii) The chain becomes fully communicable because every state becomes connected with a probability.
since all states are now connected, the steady state probability will be closer to uniform.

(iii) In order to increase the ranking, you need to have more way of reaching your website. So either having a lot of links to site or being linked to sites with high visit.

d)



If there are paths that are very likely, then the page will have low degree but high rank.