CS168 Miniproject 7

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1. A.

For (1), the circle graph is aperiodic and irreducible. It is irreducible because starting from any state, we can reach any other state through random walks through the graph. The circle graph is also aperiodic because the states don’t show up at a regular interval, meaning that once we leave a given state, we are unsure of how many time intervals it will take until we get back to said state; thus, the greatest common divisor of the possible time intervals taken to return to any given state is 1.

// I feel like these things are true for all three graphs……..

// So I tried to figure out the answer to “what is its stationary distribution” for each and I figured for 1 and 2 it would be a vector full of 1s bc each column in P contains exactly 2 0.5s and the rest are 0s so an all ones vector \* P = all ones vector… but then when I put it into python I got a different left eigenvector with weird values and when I do this different vector \* P it is not equal to this different vector sooo I’m not sure what to do.

B.

C.

D.

1. A.

B.

C.

D.

1. A.

B.

C.