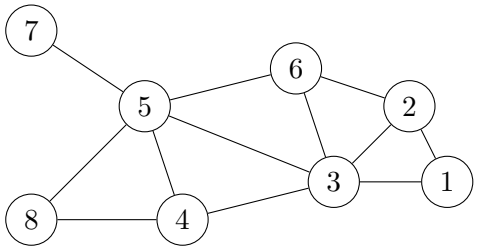
BSM Course on Markov Chains and Dynamical Systems, Fall 2026

Quiz #3, October 6; **NAME:**

1. Consider the Markov chain obtained as the random walk on the (undirected) graph below. That is, when at a vertex, the walker picks uniformly from all available edges. Determine the stationary distribution.



2. Consider the points $1, 2, 3, 4$ to be marked on a straight line. Let X_n be a Markov chain that moves to the right with probability $4/5$ and to the left with probability $1/5$, but subject this time to the rule that if X_n tries to go to the left from 1 or to the right from 4 it stays put. Show that this chain has detailed balance, and determine the stationary distribution.