# The M/M/1 Queue



- Write out the transition graph for an M/M/1 Queue with finite capacity

- Write out the jump rate matrix for an M/M/1 Queue with infinite capacity

- How do you determine the stationary distribution of a continuous time Markov chain.

- Explain why the Poisson process does not have a stationary distribution.

- Calculate the fourth element of the stationary distribution vector $\pi$ for an M/M/1 Queue.

- Explain why the zeroth element of the stationary distributin vector $\pi_0$ is given by $\pi_0 = \left(1 - \frac{\lambda}{\mu}\right)$.