

## The M/M/1 Queue

$\bullet$ Write out the transition graph for an M/M/1 Queue with finite capacity
$\bullet$ 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.

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



## The M/M/1 Queue

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