S-38.149 Postgraduate Course in Teletraffic Theory, Fall 2003
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1. A three state Markov process has transition rates

$q(0,1)=\gamma$
$q(1,2)=\lambda$
$q(2,1)=\mu$
$q(2,0)=\alpha$

a) What are the reverse transition rates?

b) Suppose we add transition rates

$q(1,0) = x$
$q(0,2) = x$

  What relation would x have to satisfy, for the process to be reversible?

2. (Exercise 10.9) Show that the scaling of the transition rates does not change stationary distribution of reversible process

3. (Exercise 10.10) Suppose that $X_i, i = 1, 2, \ldots, n$ are independent reversible processes. Show that the joint process $(X_1, X_2, \ldots, X_n)$ is also reversible.