6. A book store is selling the popular book "The Last Lecture" of Randy Pausch. It keeps 3 copies of that book on stock. Customers who want to buy this book arrive according to a Poisson process with a mean of 1 customer per day. When a copy of "The Last Lecture" is sold, the book store immediately places an order for a new copy at the supplier. Also if there is no copy on the shelf, an order for a new copy will be immediately placed and the customer will wait for the first copy to become available from the supplier. The mean lead time at the supplier is 2 days.

   (a) Determine the long-run fraction of time there are i outstanding orders.
   (b) Determine the mean number of books on the shelf.
   (c) What is the mean waiting time of a customer?