13. The manager of the Radford Credit Union (RCU) wants to determine how many part-time tellers to employ to cover the peak demand time in its lobby from 11:00 am to 2:00 pm. RCU currently has three full-time tellers that handle the demand during the rest of the day, but during this peak demand time, customers have been complaining that the wait time for service is too long. The manager at RCU has determined that customers arrive according to a Poisson distribution with an average of 60 arrivals per hour during the peak period. Each teller services customers at a rate of 24 per hour, with service times following an exponential distribution.
    a. On average, how long must customers wait in line before service begins?
    b. Once service begins for a customer, how long does it take to complete the transaction, on average?
    c. If one part-time teller is hired to work during the peak time period, what effect would this have on the average amount of time a customer spends waiting in the queue?
    d. If one part-time teller is hired to work during the peak time period, what effect would this have on the average amount of time it takes to serve a customer?