

Math 4428 Homework 8

due April 16, 2007

1. Prob. 5.7. Hint: model it as an elevator.
2. A single-bay drive-through car wash has arrivals, with exponentially distributed interarrivals times, at rate λ of 10 per hour. The manager believes that the maximum time a customer will accept to spend in the car wash is 10 minutes, including the time in line and the time car is being washed. She wants to find a service rate that keeps total customer average time in the system less than 10 minutes.
 - (a) If the service times are exponentially distributed, what service rates μ will achieve the manager's goal ?
 - (b) Graph the average waiting time as a function of μ for $10 < \mu < 20$.