

## I Love Lucy Queueing



Consider the problem of Lucy and Ethel wrapping chocolates in the chocolate factory. Clearly these two are over utilized and end up having to eat and hide candies in order to keep up. We generalize the problem and model it as a  $M/M/2/7$  queue, which is a system with 2 servers (Lucy and Ethel) and finite system capacity of 7 pieces of chocolate. Assume that the service time (time to wrap, eat or hide a piece of chocolate) is 1 minute and 65 pieces of chocolate arrive every hour at a constant rate. Find  $L$ ,  $L_q$ ,  $W$ , and  $W_q$  for this system.