This is at the top so you don't miss it! Presenting this to me is worth 10 points!

Supermarket Checkout Simulation

Write a program that simulates a checkout line at a supermarket. Customers arrive in random intervals from 1 - 4 minutes. Each customer is also serviced from 1 - 4 minutes. The store starts the day with 3 lanes open. Run the simulation for a 12-hour day (720 minutes) using the following to help you.

1. Get a random integer between 1 and 4 (customer arrival time)
2. Determine that customer's service time (another random integer!)
3. Begin servicing that customer (all lines are empty!)
4. Don't forget to account for all of the following throughout the "day"!
    a. calculate when customers arrive
    b. When they do, output a message (include customer ID and time of arrival)
    c. Enqueue them into a lane (think of logic to prevent 1 lane always being chosen!)
    d. When a customer is done being serviced, output a message (include customer ID and total time they spend in the queue)
    e. Dequeue the customer when they are finished

Answer the following questions after your simulation is complete.

1. What was the maximum number of customers in line (across all lines) at any time? How many were in each line?
2. What was the longest wait time for a customer?
3. Change the arrival time to 2-5 minutes, how does this affect the outcome? Re-answer problems 1 & 2 with these settings.
4. What are the minimum number of lanes that must be open to keep all customer's waiting times < 5 minutes using both of the arrival time intervals? How about for < 10 minutes?