

Table 9-6 Data on Outpatient Medical Laboratory

Day / Time	Number of lab tests received by day and time			
	7-11 AM	11-3 PM	3-7 PM	7-7 AM
1	156	105	44	355
2	155	110	48	363
3	160	121	59	390
4	154	127	32	320
5	180	127	50	370
6	170	120	32	322
7	155	126	30	380
8	167	129	30	430
9	148	130	40	320
10	155	105	35	350
Average tests	160	120	40	360
Average per hour	40	30	10	30
Service rate per hour	60	60	20	40

- 9-4 One expectant mother arrives at a birthing center, on average, every 12 hours. She uses a birthing suite (and all associated services) for approximately 18 hours. How many suites should there be? Why? Assume one waiting area in the center and use days as the unit of time.
- Probability that a unit must wait (P_w) in queuing system with Poisson arrivals and exponential service times.
 - Probability of an empty system (P_0) and expected number of units in the queue (L_q) for queuing systems with Poisson arrivals and exponential arrival times.

Table 9-7 Probability That a Unit Must Wait for Service (P_w) in Queuing Systems with Poisson Arrivals and Exponential Service Times.

[illegible]