

non Pacific

Solution 1

Customer	Inter arrival time	Arrival time	Service time	Service time begins	Service time ends
1	1.2 ✓	1.2 ✓	0.5 ✓	1.2 ✓	1.7 ✓
2	0.5 ✓	1.7 ✓	1.2 ✓	1.7 ✓	2.9 ✓
3	0.5 ✓	2.2 ✓	0.5 ✓	2.9 ✓	3.4 ✓
4	1.6 ✓	3.8 ✓	1.0 ✓	3.8 ✓	4.8 ✓
5	0.3 ✓	4.1 ✓	0.3 ✓	4.8 ✓	5.1 ✓
6	1.1 ✓	5.2 ✓	0.8 ✓	5.2 ✓	6.0 ✓
7	0.5 ✓	5.7 ✓	1.1 ✓	6.0 ✓	7.1 ✓
8	1.0 ✓	6.7 ✓	0.4 ✓	7.1 ✓	7.5 ✓
9	0.3 ✓	7.0 ✓	0.4 ✓	7.5 ✓	7.9 ✓
10	0.2 ✓	7.2 ✓	1.0 ✓	7.9 ✓	8.9 ✓

Customer	Event	Time	waiting in queue	data
1	A	1.2	0	
1	D	1.7	0	
2	A	1.7	0	
3	A	2.2	1	
2	D	2.9	0	
3	D	3.4	0	
4	A	3.8	0	
5	A	4.1	1	
4	D	4.8	0	
5	D	5.1	0	
6	A	5.2	0	
7	A	5.7	1	
6	D	6.0	0	
8	A	6.7	1	
9	A	7.0	2	
7	D	7.1	1	
10	A	7.2	2	
8	D	7.5	1	
9	D	7.9	0	
10	D	8.9	0	



i) number of customers in the queue = 10 ✓

ii) Total server time = 7.2

$$\text{Server Utilization} = \frac{7.2}{8.9} \times 100$$

$$= 80.89\%$$

iii) Total Delay = 3.3

$$\text{iv) Average delay per customer} = \frac{3.3}{10}$$

$$= 0.33$$

$$\text{Avg. service time} = \frac{7.2}{10}$$

$$= 0.72$$

$$\text{Avg. no. of customers in queue} = \frac{\text{no. of customers in queue}}{\text{Total no. of days}}$$

$$= \frac{10}{10} = 1$$