①

Customer No.	Rand()	Int(100 x rand())	Δt	t
1	—	—	0	0
2	0.7213	72.13	6	6
3	0.0384	3.84	1	7
4	0.1227	12.27	2	9
5	0.2345	23.45	3	12
6	0.0123	1.23	1	13
7	0.8765	87.65	7	20
8	0.9876	98.76	8	28
9	0.8512	85.12	7	35
10	0.2895	28.95	3	38

Customer No.	Enters	Served	Leaves	Waits
1	0	4	4	0
2	6	6	10	0
3	7	26	30	19

4	9	10	14	1
5	12	18	22	6
6	13	14	18	1
7	20	22	26	2
8	28	30	34	2
9	35	35	39	0
10	38	39	42	1

(a) The simulation ends at time 42.

(b) Customers 1, 2 and 9 do not have to wait in line and customer 3 had to wait the longest of 19 minutes in line.

(c) $P(\text{customer waiting in line}) = \frac{7}{10} = 0.7.$

(d)

Customer No.	Time spent in system
1	4
2	4
3	23
4	5
5	10
6	5
7	6
8	6
9	4
10	4
	71

Average time customer spends in the system = $\frac{71}{10}$

$= 0.71$

(e)

Customer No.	Time server is idle
1	0
2	2
3	0
	0

4	0
5	0
6	0
7	0
8	1
9	0
10	
	3

Time simulation ende = 42

Total time server is idle = 3

Percentage of time server is idle = $\frac{3}{42} \times 100$

$= 7.1428\%$