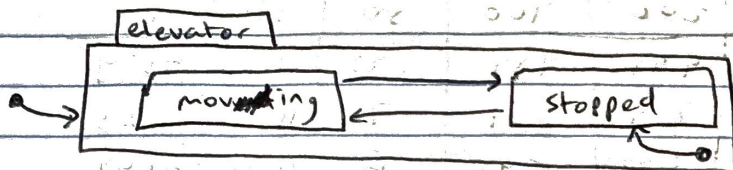


Question 1

(a)



(b) Inputs: F1-SIG, F2-SIG, F3-SIG, F4-SIG, F5-SIG, TICK-SIG, PRINT-SIG, TERMINATE-SIG
 States: QHsmTstInitial, " " - elevator, " " - stopped, " " - moving

(d)

A message is printed, and if the floor is not already pending then it is marked as such and the timestamp is stored. Also, the request counter is incremented.

(e)

Q-TRANC) transitions to the given state.
 Q-SUPERC) signifies no input being processed.
 Q-HANDLED) signifies an action on an input

(e) when stopped, a tick signal will increment a timer which, after the allotted stop time, will go to the next pending floor, moving state.

(f) When moving, TICK will increment a timer to simulate the elevator moving to the designated floor, and upon arrival the current floor is served and the state transitions to a stop.

Question 2

R =	200	100	50	20	10
F1	9.98	9.89	9.98	15.13	43.34
F2	6.9	6.99	7	11.14	27.3
F3	5.99	5.95	6	10.16	21.49
F4	6.98	7	6.97	11.13	27.08
F5	9.91	10.1	10.03	15.2	43.32

Question 3

R =	200	100	50	20	10
F1	10	9.98	9.99	16.42	47.62
F2	7	7	6.96	12.46	30.68
F3	5.98	6.03	6.02	11.14	27.26
F4	6.88	7	6.99	12.45	30.64
F5	10	9.94	9.95	16.42	47.66

Question 4

On average I was seeing 17.72 seconds to service an emergency, which lines up with the average time to service floor 1 at 20 calls/second above ↗

Question 5

I would structure each floor as its own state with an array of requests. This would be a much clearer way to traverse the floors.