Steps of doing a survey related to building elevators:

1. Identify the peak time (peak 5 minutes).
2. Form of survey:

<table>
<thead>
<tr>
<th>Time</th>
<th>Passengers</th>
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<tbody>
<tr>
<td>07:45:00 – 07:45:59</td>
<td>32</td>
</tr>
<tr>
<td>07:46:00 – 07:46:59</td>
<td>34</td>
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Hint: for simplicity in counting people you can suggest an imaginary line at the entrance of the building and start to count how many people cross this line, but if the elevator is at the close end in the building, start counting at the entrance of the elevators.

3. Use moving window to calculate the peak 5 minutes, sequentially peak 5 minutes NOT randomly.
4. Find \( U \): total population of the building.
5. Calculate AR%: arrival rate percentage related to the peak 5 minutes.
6. Finding the kinematics: (distance, velocity, acceleration, jerk)
   Hint: you can suppose that \( \text{jerk} = 1 \), \( \text{a} = 1 \).
7. Door times: \( \text{T_{do}}, \text{T_{dc}} \), usually \( \text{T_{do}} \leq \text{T_{dc}} \), for safety purposes.
8. If we have multi-entrance in the building we must make multi-survey.
   Remark: Each group of students on each entrance must have the same time watches.
   Symmetry on hour, minute and second.
9. Survey of int (interval) or \( \text{Taw} \).
10. Design.
   Hint: in the design suggest that \( \text{inttar} = 30 \text{ s} \) (interval target).

Hints:
1. T of start delay: the time between fully close of elevator door and the start of moving.
2. If we assume \( a = 1 \) and \( j = 1 \) and we have \( t \) we calculate \( d \) from \( t = (d/v) + (v/a) + (a/j) \).
3. To calculate \( t \), go from (G to 1) then from (G to 2) then from (G to 3)........ etc.
   Then the difference between two sequence movements in time is \( t \).

Good luck everybody.