

The Elevator Problem

Memo #1

From: Your Boss
To: You
Re: Late Arrivals

It has come to my attention that many of our employees are arriving in the offices well after the 9:00 a.m. starting time. They complain that the four elevators cannot handle the rush at the start of the day. We cannot, at this time, install any extra elevators or increase the capacity of existing ones above the current ten persons.

Please investigate and let me have some possible solutions to the problem.

Memo #2

From: You
To: Your Assistant
Re: Late Arrivals

Can you find out:

1. How long the elevators take to move between floors and how long they stop for people to exit?
2. How many people from each floor use the elevator in the morning?
3. How many people were late this morning?

Memo #3

From: Your Assistant
To: You
Re: Answers to your questions

1. The elevators appear to take 4 seconds between each floor, and extra 10 seconds for each stop, and another 8 seconds if the doors have to reopen. It also seems to take about 15 seconds for the elevator to fill on the ground floor.
2. The number of workers on each floor are:

Floor	G	1 st	2 nd	3 rd	4 th	5 th	6 th
Number	0	100	120	60	120	80	20
3. About 110 people were late today.

Memo #4

From: You
To: Your Boss
Re: Solutions to the lateness problem

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