

## H-Problem 4 [Lifts]

Figure 1 represents an eight-storey building with three elevators. The shaded cells represent those floors at which a particular elevator calls. Notice that all elevators call at both top and bottom floors and four floors in between. It is possible, given this configuration, to travel between any two floors by riding a single elevator. The question is, if each lift called at three floors in between top and bottom, how many lifts would be required such that any two floors are connected by a single elevator?

8			
7			
6			
5			
4			
3			
2			
1			
	E1	E2	E3

*Figure 1: Eight-storey building with three elevators, calling at the shaded floors.*

**We wish to minimize the number of elevators (combinations) required subject to the condition that there is an elevator available for each pair of floors.**

Data File: You need to solve for 6 floors and 3 visits (excluding top and bottom). lift.dat