the distance from each vertex (room) to the vertices (rooms) in the set S.

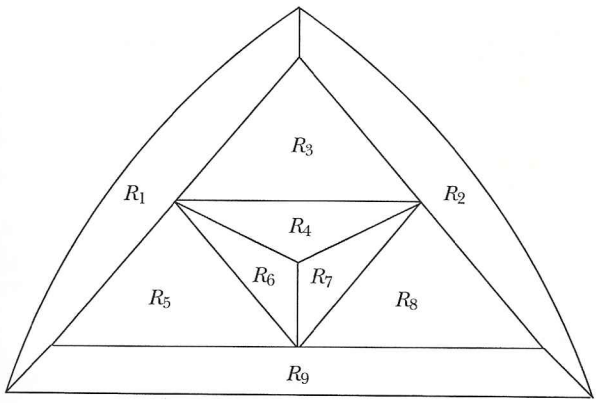

Figure 16. A graph representing the facility consisting of nine rooms in Exercise 15.

(16) For each integer $n \geq 3$, is there a graph of order n that has location number 1?

(17) Determine the domination number of the graph G shown in Figure 17.

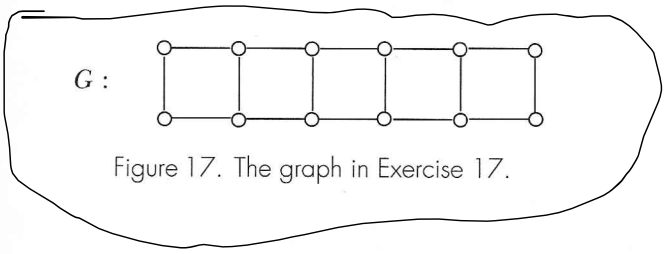

Figure 17. The graph in Exercise 17.

(18) A portion of a city consisting of seven city blocks is shown in Figure 18.

(a) What is the minimum number of security guards needed to guard all intersections, assuming that each guard has a straight-line view of all intersections up to one block away?

(b) What is the minimum number of security guards needed to view all intersections if each guard is within one block of some other guard?