1044-05-204        **Janet Dalzell**, **C. David Leach** and **Matthew Walsh\*** (`walshm@ipfw.edu`), Department of Mathematical Sciences, IPFW, 2101 East Coliseum Blvd., Fort Wayne, IN 46805. *The paranoid watchman: a search problem on graphs.*

A watchman is touring a graph to ensure that it is free of intruders. He is aware of any intruders within his immediate neighbourhood (i.e. within distance 1 of his position) and wishes to find a route that will guarantee that any intruders will be detected. We give necessary and sufficient conditions for such a route to exist in a given graph, and examine some generalizations of the problem. We also compare this with other search problems on graphs, such as cops & robbers and domination search. (Received September 01, 2008)