Art gallery or illumination theorems

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How many guards are necessary, and how many are always sufficient to patrol the paintings and works of art in an art gallery with n walls? This simple question in Combinatorial Geometry, asked by V. Klee in 1973, and solved by V. Chvatal in 1975, has developed into a full field of research in which numerous variatons and changes to Klee's original question have been asked and in many cases solved. In this talk, we will survey this exciting field of research, and present several old and new results and open problems in this area. An equivalent formulation of Klee's question has the guards represented by lights that illuminate, rather than patrol.

Among other variations, we will study problems in which the illuminating devices represent fluorescent lights, floodlights, and old fashioned light bulbs.