1067-05-1553 Nathaniel Dean* (nd17@txstate.edu), President, National Assoc. of Mathematicians, Department of Mathematics, 601 University Drive, San Marcos, TX 78666. Screen Size.

Graph drawing has numerous applications, and so there are numerous criteria for a nice or optimal drawing of a graph, such as few crossings, small area, symmetry, uniform edge lengths, angular resolution, and certain clustering properties. Often the graph must be drawn on a device such as a computer screen where the vertices are mapped to distinct points of an integer lattice. This very practical restriction suggests a graph invariant called the screen size of a graph G which is the smallest integer k such that some set of points in a $k \times k$ integer lattice realizes G, subject to a prescribed set of constraints. For two examples, we consider sphere-of-influence graphs which arise in pattern recognition and computer vision and crossing minimal, straight line drawings of graphs which arise in circuit layout applications. This talk presents bounds and open problems on the screen size for various graph families. (Received September 21, 2010)