LANDON RABERN

BASIC GRAPH COLORING

Contents

For Rachel, Atticus and Alfred.

graphs

A *graph* is a collection of dots we call *vertices* vertices-.0in some of which are connected by curves we call *edges*. edges-.0in The relative location of the dots and the shape of the curves are not relevant, we are only concerned with whether or not a given pair of dots is connected by a curve. Initially, we forbid edges from a vertex to itself and multiple edges between two vertices. If G is a graph, then $V(G)$ is its set of vertices and $E(G)$ its set of edges. $V(G)$, $E(G)$-.15in We write G for the number of vertices in $V(G)$ and G for the number of edges in $E(G)$. G, G Two vertices are *adjacent* adjacent+0.15in if they are connected by an edge. The set of vertices to which v is adjacent is its *neighborhood*, written $N(v)$. neighborhood+0.0in $N(v)$+0.15in For the size of v's neighborhood $N(v)$, we write $d(v)$ and call this the *degree* of v. $d(v)$, degree+0.3in

Bibliography