

1. Record Nr.	UNISA996199059103316
Autore	Jensen Tommy R.
Titolo	Graph coloring problems // Tommy R. Jensen, Bjarne Toft
Pubbl/distr/stampa	New York, New York : , : John Wiley & Sons, Inc., , 1995 ©1995
ISBN	1-283-33198-5 9786613331984 1-118-03249-7 1-118-03074-5
Descrizione fisica	1 online resource (324 p.)
Collana	Wiley-Interscience Series in Discrete Mathematics and Optimization
Disciplina	511.5 511/.5
Soggetti	Graph coloring
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"A Wiley-Interscience Publication."
Nota di bibliografia	Includes bibliographical references at the end of each chapters and indexes.
Nota di contenuto	Graph Coloring Problems; Contents; Preface; 1 Introduction to Graph Coloring; 1.1 Basic Definitions; 1.2 Graphs on Surfaces; 1.3 Vertex Degrees and Colorings; 1.4 Criticality and Complexity; 16.14 Partition Problem of Galvin and Hajnal; 1.5 Sparse Graphs and Random Graphs; 1.6 Perfect Graphs; 1.7 Edge-Coloring; 1.8 Orientations and Integer Flows; 1.9 List Coloring; 1.10 Generalized Graph Coloring; 1.11 Final Remarks; Bibliography; 2 Planar Graphs; 2.1 Four-Color Theorem; 2.2 Cartesian Sequences; 2.3 Intersection Graphs of Planar Segments; 2.4 Ringel's Earth-Moon Problem 2.5 Ore and Plummer's Cyclic Chromatic Number 2.6 Vertex Partitionings w.r.t. Coloring Number; 2.7 Vertex Partitionings w.r.t. Maximum Degree; 2.8 The Three-Color Problem; 2.9 Steinberg's Three-Color Problem; 2.10 Grunbaum and Havel's Three-Color Problem; 2.11 Grotzsch and Sachs' Three-Color Problem; 2.12 Barnette's Conjecture; 2.13 List-Coloring Planar Graphs; 2.14 Kronk and Mitchem's Entire Chromatic Number; 2.15 Nine-Color Conjecture; 2.16 Uniquely Colorable Graphs; 2.17 Density of 4-Critical Planar Graphs; 2.18 Square of Planar Graphs; Bibliography; 3 Graphs on

## Higher Surfaces

3.1 Heawood's Empire Problem 3.2 Grunbaum's 3-Edge-Color Conjecture; 3.3 Albertson's Four-Color Problem; 3.4 Improper Colorings; 3.5 Number of 6-Critical Graphs on a Surface; 3.6 Toroidal Polyhedra; 3.7 Polynomial Coloring of Embedded Graphs; 3.8 Sparse Embedded Graphs; 3.9 Ringel's 1-Chromatic Number; 3.10 Borodin's Conjecture on Diagonal Coloring; 3.11 Acyclic Colorings; 3.12 Cochromatic Numbers; 3.13 Graphs on Pseudo-Surfaces; Bibliography; 4 Degrees; 4.1 The Coloring Number; 4.2 Coloring of Decomposable Graphs; 4.3 Color-Bound Families of Graphs; 4.4 Edge-Disjoint Placements  
4.5 Powers of Hamilton Cycles 4.6 Brooks' Theorem for Triangle-Free Graphs; 4.7 Graphs Without Large Complete Subgraphs; 4.8  $k$ -Chromatic Graphs of Maximum Degree  $k$ ; 4.9 Total Coloring; 4.10 Equitable Coloring; 4.11 Acyclic Coloring; 4.12 Melnikov's Valency-Variety Problem; 4.13 Induced-Odd Degree Subgraphs; 4.14 Strong Chromatic Number; Bibliography; 5 Critical Graphs; 5.1 Critical Graphs With Many Edges; 5.2 Minimum Degree of 4- and 5-Critical Graphs; 5.3 Critical Graphs With Few Edges; 5.4 Four-Critical Amenable Graphs; 5.5 Four-Critical Degree 5 Problem  
5.6 Large Critical Subgraphs of Critical Graphs 5.7 Critical Subgraph Covering a 2-Path; 5.8 Noninduced Critical Subgraphs; 5.9 Number of Critical Subgraphs; 5.10 Subgraphs of Critical Graphs; 5.11 Minimal Circumference of Critical Graphs; 5.12 The Erdos-Lovasz Tihany Problem; 5.13 Partial Joins of Critical Graphs; 5.14 Vertex-Critical Graphs Without Critical Edges; Bibliography; 6 The Conjectures of Hadwiger and Hajos; 6.1 Hadwiger's Conjecture; 6.2 Hajos' Conjecture; 6.3 The  $(m, n)$ - and  $[m, n]$ -Conjectures; 6.4 Hadwiger Degree of a Graph; 6.5 Graphs Without Odd- $K_5$ ; 6.6 Scheme Conjecture  
6.7 Chromatic 4-Schemes

---

### Sommario/riassunto

Contains a wealth of information previously scattered in research journals, conference proceedings and technical reports. Identifies more than 200 unsolved problems. Every problem is stated in a self-contained, extremely accessible format, followed by comments on its history, related results and literature. The book will stimulate research and help avoid efforts on solving already settled problems. Each chapter concludes with a comprehensive list of references which will lead readers to original sources, important contributions and other surveys.

---