Pisanski, Tomaž; **Servatius, Brigitte**
Configurations from a graphical viewpoint. (English) ⎢Zbl 1277.05001⎥
Birkhäuser Advanced Texts. Basler Lehrbücher. New York, NY: Birkhäuser (ISBN 978-0-8176-8363-4/hbk; 978-0-8176-8364-1/ebook). xiii, 279 p. (2013).

This book is a concise introduction to several important topics in geometric configurations. The dominating theme is graph theory. Graph theory has several facets. Algebraic graph theory exploits symmetries. Topological graph theory regards graphs as a description of surfaces, to which the techniques of algebraic topology can be applied. Geometric graph theory talks about geometries, in particular, incidence geometries. Although neither a chapter nor a section are devoted to incidence geometry in the book, the authors freely use it, providing a viewpoint from which such difficult topics as graphs, groups, maps and configurations become readily accessible.

The first book on configurations is [*F. Levi*, Geometrische Konfigurationen. Mit einer Einführung in die Kombinatorische Flächentopologie. Leipzig: S. Hirzel (1929; JFM 55.0351.03)], and one of the recent books is [*B. Grünbaum*, Configurations of points and lines. Providence, RI: American Mathematical Society (2009; Zbl 1205.51003)], to which the authors owe much.

Reviewer: Hirokazu Nishimura (Tsukuba)

MSC:

05-01   Textbooks (combinatorics)
05B30   Other designs, configurations
05C90   Applications of graph theory
51E30   Other finite incidence structures

Cited in **10** Documents

Keywords:

graph theory; configuration; incidence geometry; symmetry; algebraic graph theory; topological graph theory; map

Full Text: DOI