

Contents

1 Reflection in a circle (inversion)	1
Notes to Section 1	31
2 Application of inversions to the solution of constructions	33
Problems. Constructions with compass alone	33
Problems involving the construction of circles	35
Notes to Section 2	42
3 Pencils of circles. The radical axis of two circles	43
Notes to Section 3	59
4 Inversion (concluding section)	61
Notes to Section 4	77
5 Axial circular transformations	81
A. Dilatation	81
B. Axial inversion	100
Notes to Section 5	135
Supplement	143
Non-Euclidean Geometry of Lobachevskii-Bolyai, or Hyperbolic Geometry	143
Notes to Supplement	166
Solutions	171
Section 1	171

Section 2	196
Section 3	214
Section 4	222
Section 5	243
Supplement	272
About the Author	285