

Contents

	Preface	3
1.	Space Analytic Geometry	5
	1.1 Vector and Vector Function	5
	1.2 Analytic Description of Lines and Planes	19
	1.3 Angles and Distances	22
2.	Transformations	24
	2.1 Transformations in Plane	24
	2.2 Transformations of Affine Coordinates	30
	2.3 Transformation in Space	31
3.	Methods of Projections	33
	3.1 Parallel and Central Projection	33
	3.2 Orthographic Projection	35
	3.3 Axonometry	50
	3.4 Sketching	68
4.	Perspective	71
5.	Curves	98
	5.1 Examples	98
	5.2 Parametric Curves	101
	5.3 Conic Sections	109
	5.4 Plane Curves	120
	5.5 Space Curves	129
	5.6 Computer Curves	137
6.	Surfaces	147
	6.1 Analytic Description of a surface	147
	6.2 Simple Surfaces	151
	6.3 Surfaces of Revolution	168
	6.4 Quadrics	174
	6.5 Ruled Surfaces	189
	6.6 Helicoid Surfaces	196
	6.7 Special Types of Surfaces	199
	Appendices	203
	Appendix 1	203
	Appendix 2 - About <i>Mathematica</i>	206
	Appendix 3 - Dictionary	210
	References	218