CONTENTS

CHAPTER I

	General Theory of Places
1.	Definition of places
2.	Valuations
3.	Examples
4.	Extension of places
5.	Integral closure
6.	Places in algebraic extensions
	C HAPTER I I
	Algebraic Varieties
l.	Notation and preliminaries
2.	Decomposition theorem
3.	Generic points and specializations
4.	The Hilbert Nullstellensatz
5.	Decompostion over the algebraic closure of $k cdots cdots$
6.	Product varieties over an algebraically closed field
7.	The dimension theorem
8.	Homogeneous varieties
9.	Elimination theory
	C HAPTER III
	Absolute Theory of Varieties
1.	Auxiliary algebraic results
2.	Behaviour of an ideal under constant field extensions 6
3.	Absolute varieties, fields of definition, generic points
4.	Conjugate varieties
5.	The Zariski topology
6.	Rationality of a cycle over a field
	Chapter I V
	Products, Projections, and Correspondences
1.	Products of varieties

X CONTENTS

	Projections	87
3.	Rational maps.	89
4.	Functions and function fields	98
5.	Correspondences	100
6.	Abstract varieties	106
	C HAPTER V	
	Normal Varieties	
1.	Integral closure of an affine ring	119
2.	Zariski's Main Theorem (ZMT)	124
3.	Normalization of an abstract variety	130
	Normalization of a projective variety	133
5.	Projective normality	139
6.	Constant field extensions	146
	Chapter V I	
	Divisors and Linear Systems	
1.	Divisors and divisors of functions	151
	Existence of functions with given zeros	157
	Linear systems.	158
	The rational map associated with a linear system	164
5.	Divisors rational over a field	169
	Chapter VII	
	Differential Forms	
1	Derivations	183
	Differential forms	187
	C HAPTER VIII	
	Theory of Simple Points	
	Auxiliary results on commutative rings	195
2.	Definition of simple a point	198
	Existence of local uniformizing parameters	199
	The expansion in power series	206
	Dimension theorem for simple components	208
6.	The generic hyperplane section	211

C HAPTER X

	Riemann-Roch Theorem			
1.	Lemmas on valuations			231
2.	The Riemann-Roth theorem			233
3.	Residues in power series fields			242
4.	The sum of the residues			247
6.	Another proof for the sum of the residues			252
	Construction of the Jacobian variety			
	Harnack's theorem			
In	dex			269