

Table of Contents

List of Programs	vii
Preface	xv
Acknowledgments	xvii
Introduction	xix

Chapter 1 Character Functions

Introduction	3
Functions That Change the Case of Characters	5
Functions That Remove Characters from Strings	11
Functions That Search for Characters	16
Functions That Extract Parts of Strings	43
Functions That Join Two or More Strings Together	51
Functions That Remove Blanks from Strings	61
Functions That Compare Strings (Exact and "Fuzzy" Comparisons)	70
Functions That Divide Strings into "Words"	89
Functions That Substitute Letters or Words in Strings	100
Functions That Compute the Length of Strings	105
Functions That Count the Number of Letters or Substrings in a String	109
Miscellaneous String Functions	113

Chapter 2 Perl Regular Expressions

Introduction	121
A Brief Tutorial on Perl Regular Expressions	122
Function That Defines a Regular Expression	128
Functions That Locate Text Patterns	130
Function That Substitutes One String for Another	147
Function That Releases Memory Used by a Regular Expression	150

Chapter 3 SAS Regular Expressions

- Introduction **153**
- Function That Defines a Regular Expression **154**
- Functions That Locate Text Patterns **156**
- Function That Substitutes One String for Another **159**
- Function That Releases Memory Used by a Regular Expression **162**

Chapter 4 Date and Time Functions

- Introduction **166**
- Functions That Create SAS Date, Datetime, and Time Values **166**
- Functions That Extract the Year, Month, Day, Etc., from a SAS Date **174**
- Functions That Extract Hours, Minutes, and Seconds from SAS Datetime and Time Values **178**
- Functions That Extract the Date or Time from SAS Datetime Values **181**
- Functions That Work with Date, Datetime, and Time Intervals **183**
- Functions That Work with Julian Dates **194**

Chapter 5 Array Functions

- Introduction **199**

Chapter 6 Truncation Functions

- Introduction **205**
- Functions That Round and Truncate Numerical Values **206**
- Function That Returns SAS Numerical Values Stored in Fewer than 8 Bytes **214**

Chapter 7 Descriptive Statistics Functions

- Introduction **218**
- Functions That Determine the Number of Missing and Nonmissing Values in a List of SAS Variables **218**
- Functions That Compute Sums, Means, and Medians **221**

Functions That Compute the Spread or Dispersion of Data Values **225**

Functions That Determine the Ordering of Data Values **228**

Chapter 8 Mathematical Functions

Introduction **249**

Commonly Used Mathematical Functions **250**

Functions That Work with Exponentiation and Logarithms **258**

Factorial and Gamma Functions **261**

Chapter 9 Random Number Functions

Introduction **265**

Functions That Generate Uniform Random Numbers **268**

Functions That Generate Normally Distributed Numbers **281**

Chapter 10 Special Functions

Introduction **289**

Functions That Obtain Values from Previous Observations **289**

Functions That Perform Character-to-Numeric or Numeric-to-Character Conversion **295**

Chapter 11 State and Zip Code Functions

Introduction **307**

Functions That Convert FIPS Codes **308**

Functions That Convert State Codes **311**

Functions That Convert Zip Codes **313**

Chapter 12 Trigonometric Functions

Introduction **319**

Three Basic Trigonometric Functions **319**

Three Inverse Trigonometric Functions **323**

Chapter 13 Macro Functions

Introduction **327**

Chapter 14 SAS File I/O Functions

Introduction **339**

Functions That Determine if SAS Data Sets Exist, and That Open and Close Files **341**

Functions That Return SAS Data Set Characteristics **343**

Functions That Return Variable Information **349**

Chapter 15 Variable Information Functions

Introduction **359**

Functions That Determine SAS Variable Information **360**

Functions That Determine Format Information **370**

Functions That Determine Informat Information **373**

Chapter 16 Bitwise Logical Functions

Introduction **379**

List of Functions **391**

Index **399**