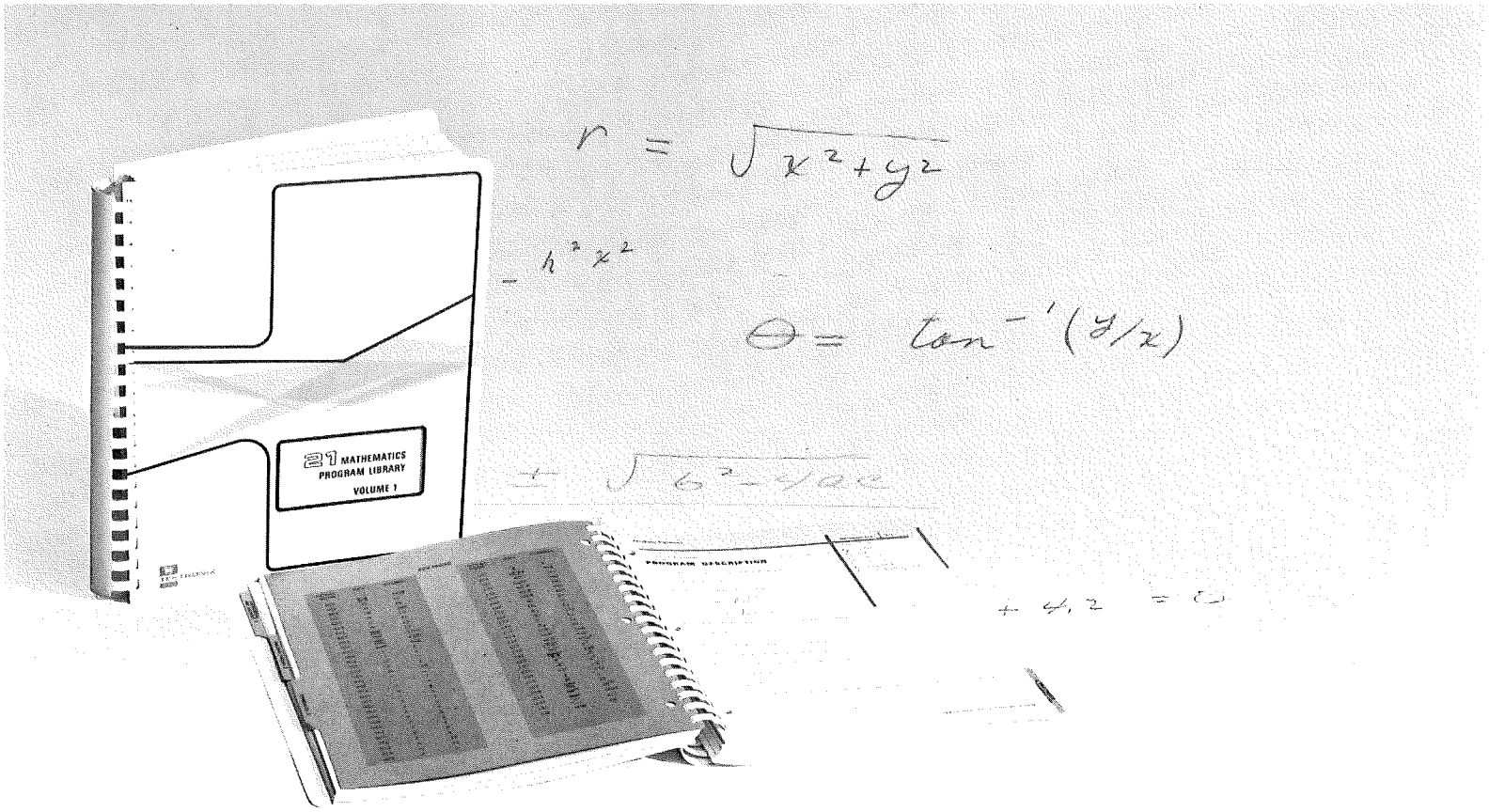

The Tektronix Mathematics Program Libraries

Join your math expertise with ours.

Put our math software programs to work on your TEK 21 or 31 calculators. It brings low cost efficiency to your math computation activity. TEK's math software library provides simplicity in all math calculation. Data entry and solutions are as easy as pressing a key.

The libraries for both calculators take the form of a manual. The programs in each 21 or 31 manual are designed for the memory configurations of that particular instrument. Within the manual, program information is divided into 4 sections: program description, examples, program execution and the individual program steps. All documented in clear, complete, easy-to-understand language.

Product Data

TEK 21 MATH PROGRAM LIBRARY:

- The 21 library is written for a 256 step data memory configuration. Many of the shorter programs, however, can easily function with the basic 128 step memory.
- Chain operations within programs and linking from one program to another are easily accomplished in several sections.
- Each program can be recorded and stored on magnetic cards.

THE 21 MATH-PROGRAM LISTING:

Section 1 Geometry and trigonometry
- 1-1 Plane Triangle Solutions
- 1-2 Plane Closed Polygon, Area and Perimeter
- 1-3 Circle Determined from Three Known Points
- 1-4 Circles Tangent to Two Lines

Section 2 General functions
- 2-1 Gamma Functions and Factorials
- 2-2 Number Base Conversion: Base 10 to N
- 2-3 Number Base Conversion: Base N to 10, $N \geq 2$
- 2-4 Number Base Conversion: Base N to 10, $2 \leq N \leq 9$

Section 3 Polynomials
- 3-1 Quadratic Equations
- 3-2 Cubic Equations
- 3-3 3rd-Order Polynomial Interpolation
- 3-4 Real Roots of Functions by the Halving Method
- 3-5 Real Roots of Functions by the Secant Method

Section 4 Simultaneous equations and matrices
- 4-1 Two Simultaneous Equations
- 4-2 Three Simultaneous Equations
- 4-3 3rd-Order Determinant; Scalar Triple Product
- 4-4 3rd-Order Matrix: Inversion and Simultaneous Equations
- 4-5 3rd-Order Matrix: Characteristic Polynomial and Eigenvalue Solution

Section 5 Vectors
- 5-1 Vector Addition and Subtraction, 2-Dimensions
- 5-2 Vector Addition and Subtraction, 3-Dimensions
- 5-3 Vector Cross Products
- 5-4 Rotation and Translation of Axes, 2-Dimensions
- 5-5 Coordinate Transforms: Rectangular to Polar or Spherical, and Inverse
- 5-6 Vector Scalar Product and Angle, N-Dimensional Vectors

Section 6 Complex operators
- 6-1 Complex Operators: Polar to Rectangular Conversion and Inverse
- 6-2 Complex Operators: X, ÷, +, and −
- 6-3 Complex Operators: $Z_1 z^2$, $\sqrt{Z_1^2 + Z_2^2}$
- 6-4 Complex Operators: e^z, ln z, log z
- 6-5 Complex Operators: z^2, $\sqrt{z}$, 1/z
- 6-6 Complex Operators: tan z, cos z, sin z
- 6-7 Complex Operators: tanh z, cosh z, sinh z
- 6-8 Complex Operators: arctan z, arccos z, arcsin z
- 6-9 Complex Operators: arctanh z, arccosh z, arcsinh z

TEK 31 MATH PROGRAM LIBRARY:

- This library is designed primarily for the basic 512 step and 64 register memory.
- Linking capability is built in.
- Permanent recording and storing can be done with the use of magnetic tape cartridges.

THE 31 MATH PROGRAM LISTING:

Section 1 Geometry and trigonometry
- 1-1 Plane Triangle Solutions
- 1-2 Plane Closed Polygon, Area and Perimeter

Section 2 General functions
- 2-1 Gamma Functions and Factorials
- 2-2 Number Base Conversion: Base 10 to N
- 2-3 Number Base Conversion: Base N to 10, $N \geq 2$
- 2-4 Number Base Conversion: Base N to 10, $2 \leq N \leq 9$

Section 3 Polynomials
- 3-1 Quadratic Equations and cubic equations
- 3-2 3rd-Order Polynomial Interpolation
- 3-3 Real Roots of Functions by the Halving and Secant Methods

Section 4 Simultaneous equations and matrices
- 4-1 Matrix Inversion and Simultaneous Equations I
- 4-2 Matrix Inversion and Simultaneous Equations II
- 4-3 Matrix Arithmetic I
- 4-4 Matrix Arithmetic II

Section 5 Vectors
- 5-1 Vector Addition and Subtraction, Polar or Spherical Coordinates
- 5-2 Vector Cross Products, Rectangular or Spherical Coordinate
- 5-3 Rotation and Translation of Axes, Rectangular or Polar Coordinate
- 5-4 Coordinate Transforms: Rectangular to Polar or Spherical, and Inverse
- 5-5 Vector Inner Product, Magnitudes, and Angles for N Dimensions

Section 6 Complex operators
- 6-1 Complex Operators: Polar to Rectangular Conversion and Inverse
- 6-2 Complex Operators: X, ÷, +, and −; Z_1, Z^2, $\sqrt{Z^2}$, $+Z^2$
- 6-3 Complex Operators: C^z, log Z, Z^2 $\sqrt{Z}$, $1/Z$
- 6-4 Complex Operators: tan z, cos z, sin z, arctan z, arccos z, arcsin z
- 6-5 Complex Operators: tanh z, cosh z, sinh z, arctan Hz, and arccos Hz, arcsin z

Section 7 Integration and differential equations
- 7-1 Numerical Integration (Quadrature)
- 7-2 1st-Order Differential Equations
- 7-3 2nd-Order Differential Equations
- 7-4 Nth-Order Differential Equations, $N \geq 3$
- 7-5 Two Simultaneous Differential Equations

Attn: Colin Barton
Information Display Division
P.O. Box 500, Beaverton, Ore. 97005
Telephone: (503) 644-0161
Telex: 36-691
Cable: TEKTRONIX
or Tektronix Datatek N.V.
P.O. Box 7718 Schiphol Airport
The Netherlands

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