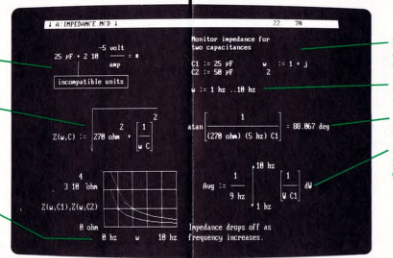
MathCAD is a powerful tool for the calculations you do every day.

MathCAD allows you to "write" equations on your PC exactly as you would on paper. You just define variables and enter formulas anywhere on the screen. Your equations are expanded fully, displayed and instantly calculated . . . in **real math notation.**

Easily try an unlimited number of "what if" scenarios.

Unlike a calculator, MathCAD lets you **see and record every step.** You can easily change a variable or an equation, and immediately see the effect.

And since MathCAD can display your results as numbers, tables or graphs, **you can clearly see the results of your "what ifs."** Plus you can store your entire calculation (and any notes you've made to yourself) . . . so you can edit or update your work at any time.



Comprehensive math capabilities . . . and instant graphics to display your results.

MathCAD handles both real and complex numbers, does unit conversion and dimensional analysis, and has a comprehensive range of built-in functions. (See the back panel for a complete listing.)

Application: ASIC Design

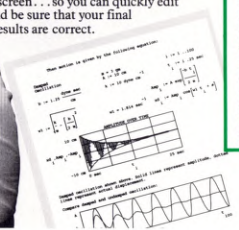
"**MathCAD is a super powerful tool. I use it for modeling bipolar analog ASIC devices. It allows me to quickly see device V/I variations with changing device parameters. With MathCAD, I can do in 5 minutes what would take me a whole day with SPICE.**"

Dick Patch, Consulting Engineer, General Electric

Plus MathCAD gives you the ability to define your own functions, if what you need is not already pre-defined.

MathCAD's powerful graphics capabilities give you dramatic visual insight into your calculations. You control the format . . . from small plots that fit next to your equations . . . to single graphs larger than a page. And you can plot multiple functions, or use more than one x-axis variable, on the same graph.

MathCAD **checks for errors** before it processes your equations . . . looking for such things as undefined variables, mismatched units or missing parentheses. Error messages are displayed right on the screen . . . so you can quickly edit and be sure that your final results are correct.



Application: Robot Arm Research

"**I use MathCAD to explore mechanical engineering problems in robot performance, trying to figure out the right way to design and built robot arms. I like MathCAD because I can believe the answers. It's the fastest way I know to see the effect of realistic component values on mechanical performance.**"

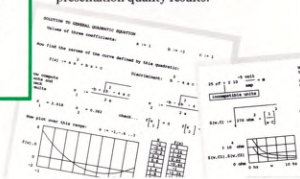
Ken Salisbury, Research Scientist, M.I.T.

Combine equations, graphics and text to document your work.

With MathCAD, you can add text anywhere . . . a quick note or a complete page. So you can explain your calculations or produce a complete report.

To quickly rearrange your document, you can "cut and paste" text, graphics or equations right on the screen. Plus MathCAD gives you the ability to use split-screens to edit documents or compare calculations.

And when you're ready, you can print out exactly what you see . . . equations, graphs and text. Set your own page boundaries or selectively print just certain areas of your document, for presentation quality results.



Application: Audio Equipment Design

"**I use MathCAD to analyze equations for power amplifier design and to model filter transfer functions. It's much faster and easier to use than doing the calculations by hand or writing short programs. MathCAD makes it easy to try lots of possibilities. A very welcome tool.**"

Michael P. Anthony, Chief Engineer, A.D.S. Inc.

MathCAD is so easy you'll be using its full power in one hour.

Because MathCAD is not a programming language, it is very easy to learn. You'll be able to concentrate on the problem rather than on a program. **You can begin calculating with MathCAD immediately, and have its full power available to you in just one hour after you begin.**

And for working even faster, MathCAD provides a pull-down menu system and on-line HELP to quickly guide you through.

30 day risk-free trial

We're so positive that MathCAD will make your work faster and easier, we're inviting you to try it risk-free for 30 days, with our money-back guarantee. See for yourself how revolutionary MathCAD is. If for any reason you're not completely satisfied, return it to us for a prompt and courteous refund.

Find out today how MathCAD's unique combination of power, ease and flexibility can dramatically enhance the way you work . . . provide you with the simplicity of real math notation . . . and the graphics and text capabilities that no calculator or programming language can supply. Just call **1-800-MathCAD** to order (in MA, call 617-577-1017), and we'll ship MathCAD to you within 48 hours.

MathSoft's Service and Support.

MathSoft believes that our customers are entitled to the best in long term service and support. Our toll-free hotline is staffed by experienced technical professionals to answer your questions. As a registered MathCAD customer, you'll receive *The MathCAD User's Journal*, discounts on updates and new products, and our special Applications and Games diskette.

MathCAD 1.1 Specifications

EQUATION TYPES

10 + 2^3 = 42	Calculate result
x := a + b	Define variable
x := 3.5	Define variable globally
f(x,y) := x^y	Define function
i := −5, −4 ..5	Define range var.
x_i := sin(i)	Define subscripted var.

OPERATORS

(x)	Parentheses
−x	Negation
x + y	Addition
x − y	Subtraction
x * y	Multiplication
$\frac{x}{y}$	Division
x^y	Power
$\sqrt{x}$	Square root
x!	Factorial
| x |	Absolute value
x_i	Subscript
$\sum_i x_i$	Summation
$\prod_i x_i$	Product
$\int_a^b f(x)\,dx$	Integral
$\frac{d}{dx} f(x)$	Derivative

UNITS

Supports mass, length, time, charge, and dimensions derived from these.

Automatically computes and displays dimensions.

Checks equations for dimensional consistency.

Includes MKS, CGS, and US Customary unit definitions and conversions.

BUILT-IN FUNCTIONS AND VARIABLES

Trigonometric

sin	cos	tan
asin	acos	atan
angle...	*angle to point (x,y)*	

Hyperbolic

sinh	cosh	tanh
asinh	acosh	atanh

Other Mathematical

exp	log	ln

Bessel

Y0	Y1	Yn
J0	J1	Jn

Complex

Re	Im

Truncation

floor	ceil

File access

READ WRITE APPEND

Arrays

last	length	
max	min	

Statistical

mean	stdev	
!	erf	histo
corr	slope	intercept

Cubic spline

lspline	pspline	cspline
interp		

Fourier transform

fft	ifft

Special

rnd . . . *random number*

. . . *Heaviside step*

until . . . *stop on condition*

mod . . . *remainder*

root . . . *solve expression*

Predefined variables

π	e	∞
%	TOL . . . *tolerance*	

SYSTEM REQUIREMENTS

IBM PC, XT, AT or compatible. 512K RAM. DOS 2.0 or later. 8087 or 80287 math coprocessor recommended.

Graphics Cards:
IBM Color Graphics Adapter or compatible; Hercules Graphics Card or IBM Enhanced Graphics Adapter or compatible.

Printers
IBM Graphics Printer, Proprinter, or compatible. Includes Epson FX-85, FX-185, FX-286, EX, and JX series; Okidata 90, 180, 190, 290 series configured for IBM. H-P LaserJet. Epson FX, RX, MX, LX, LQ series, supported except for Greek letters.

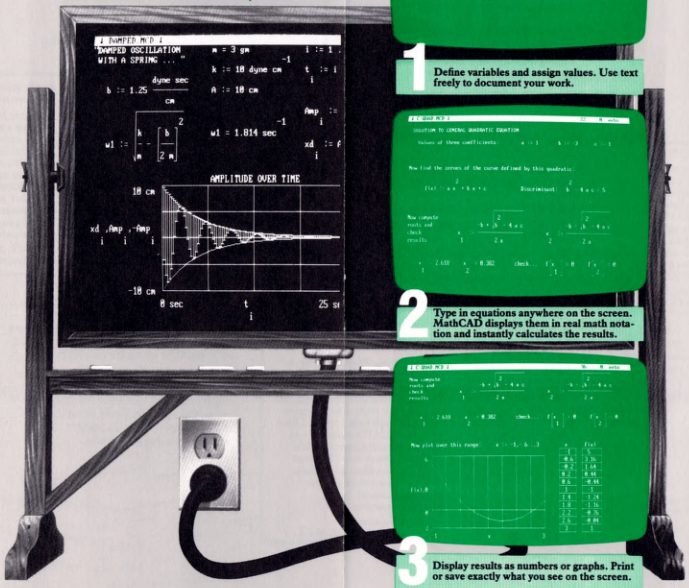
MathSoft
Σ + √ − = × ∫ ÷ δ
One Kendall Square, Cambridge, MA 02139
617-577-1017

Printed in U.S.A.

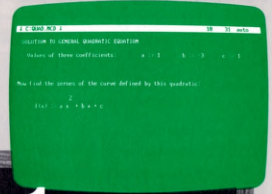
The only software that does calculations the way you do.

MathCAD™

The Electronic Scratchpad.



So easy to use.



1 Define variables and assign values. Use text freely to document your work.

2 Type in equations anywhere on the screen. MathCAD displays them in real math notation and instantly calculates the results.

3 Display results as numbers or graphs. Print or save exactly what you see on the screen.

MathCAD

combines the flexibility of a blackboard, the simplicity of a calculator and the power of your PC.

Imagine, a sophisticated electronic tool that would allow you to do calculations in real math notation—mixing text, formulas and graphics with the same freeform ease you have on a blackboard or a scratchpad.

Imagine the implications, if that same tool were also faster and easier to use than your calculator.

Now try to imagine the unlimited possibilities if that flexible, easy-to-use tool were to harness the computing power of your PC.

At MathSoft, we did more than imagine it. We invented it.

And for the thousands of engineers who've already discovered it, MathCAD is nothing short of revolutionary.

MathCAD
The first electronic scratchpad

- Display, calculate and print your equations in **real math notation**.
- Mix formulas, text, and graphics—completely freeform.
- See your results immediately as **numbers or graphs**.
- Easily change anything, anywhere on the screen, and **instantly see the results**.
- Print or save your entire calculation as an integrated document.

Once you've discovered the calculating power of MathCAD, it's hard to imagine what you ever did without it.