GCSE & A-LEVEL MATHS BROUGHT TO LIFE!

Derive 6

NEW v6.1

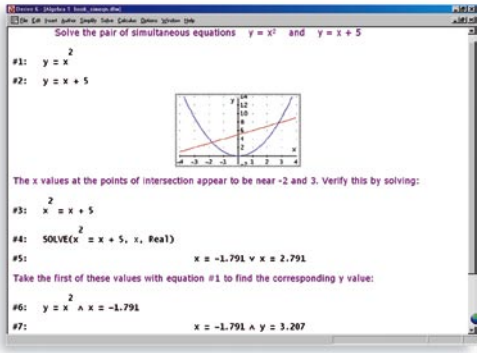
Derive does for algebra, equations, trigonometry, vectors, matrices and calculus what the scientific calculator does for numbers. It eliminates the drudgery of performing long and tedious computations. You can easily solve both symbolic and numeric problems and see the results plotted as 2D graphs or 3D surfaces.

Mathematical features

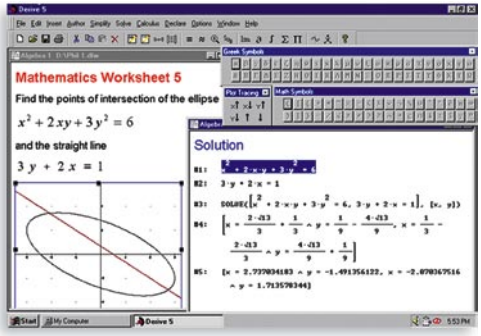
- Derive algebraically simplifies, expands and factors symbolic expressions. Solve equations, inequalities, and systems of polynomial equations for real and complex roots.
- Perform exact rational arithmetic without round-off errors, and adjust precision for approximate arithmetic.
- Derive applies the rules of trigonometry, calculus, matrix algebra and vector calculus to solve your toughest maths problems.
- Explore an extensive library of utility files, including functions for differential equations, number theory, and other special applications.
- Define functions and assign variable values.
- Use flexible block, loop, and if-then-else control constructs for procedural programming.

Mathematical worksheets

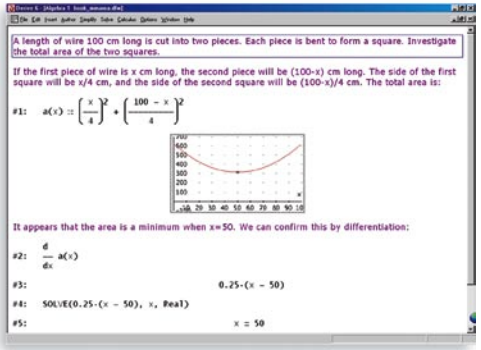
- Create, edit, print and save explorations as formatted mathematical worksheets.
- Format mathematical expressions, text, 2D and 3D graphic images, and OLE objects.
- Write worksheets in Rich Text Format.
- Enter Greek variables and mathematical symbols using dockable toolbars.
- Enter vector and matrix elements with templates.
- Use templates for algebra and calculus functions.
- Expressions are displayed in easy-to-read, standard mathematical notation.
- View the elapsed time during long computations.
- Mouse-click to select subexpressions for editing, substitution, and experimentation.
- Easy to document and share your work.



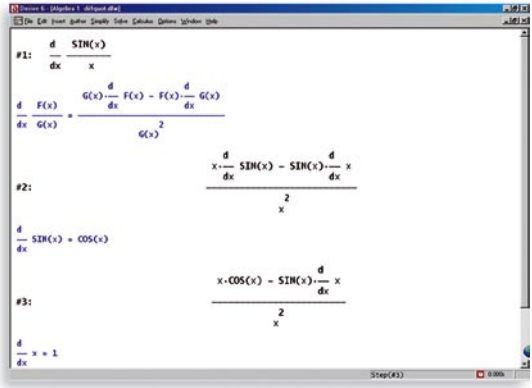
Worksheet with embedded graph showing graphical as well as algebraic approach to solving simultaneous equations



Floating toolbars give quick access to Greek and other mathematical symbols. Plot tracing controls and an embedded expression from MathType are shown above also

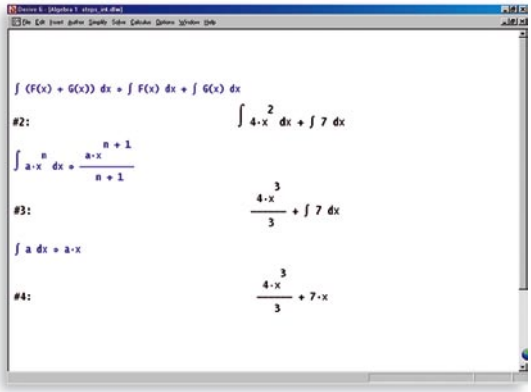


Derive 6 worksheets let students present professional results - and can now exchange data with TI CAS calculators



Steps to Success

- Show simplification steps in differentiation and integration.
- Optional display of transformation rules.
- Intermediate steps can be shown in calculus and other topics.
- Derive 6 users will be able to download free updates as the ability to show steps in other areas of mathematics is added.



#1: a :∈ Real (0, ∞)

#2: b :∈ Real (0, ∞)

Task: Express ln(a³b) in terms of ln(a) and ln(b)

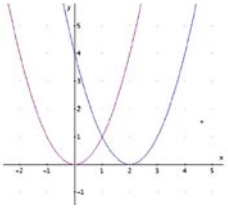
#3: $LN(a^3 \cdot b)$

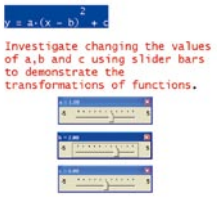
$LN(x \cdot z) = LN(x) + LN(z)$

#4: $3 \cdot LN(a) + LN(b)$

$LN(x^n) = n \cdot LN(x)$

#5: $3 \cdot LN(a) + LN(b)$

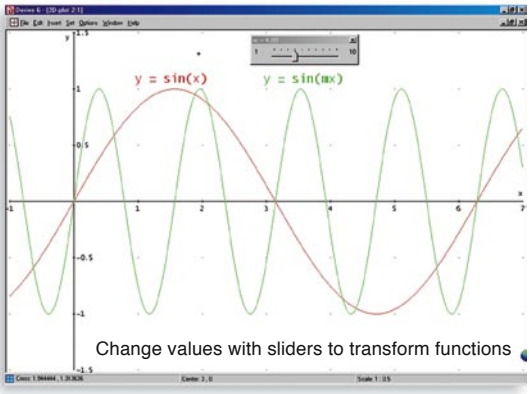




ABOVE: Derive 6 recognises and applies rules of logarithms for the step-by-step simplification of expressions

RIGHT: Interactive on-screen sliders can be used to dynamically investigate families of curves by changing parameter values in real time

OVERLEAF: Further details of Derive's vast capabilities, support materials and great value licensing. For full details see www.chartwellyorke.com/derive.html where a free 30-day trial can be downloaded.



Change values with sliders to transform functions

Easy to use *(Review Extract)*

"The way to use Derive can be summarised as: "First author your expression, then do what you want with it". For example if you wish to factorise the cubic $x^3 - 5x^2 + 7x - 3$ then you author (*i.e.* type) this expression in the Entry Line, press Enter, and it appears on the left side of the Algebra Window. You then select Factor from the Simplify menu, and the result $(x-3)(x-1)^2$ appears on the next line and offset to the right to show that it is machine output.

Similarly to differentiate $x^3 . cos\ 2x$, type it and select Differentiate from the Calculus menu to obtain $3x^2 . cos2x - 2x^3 . sin2x$.

Actually, things are rather more sophisticated than how I have just described them. Whenever a command such as Factorise, Expand, Differentiate, Integrate and so on is selected, a dialogue box appears with a variety of choices. The default settings usually suffice to produce the expected answer, especially for the level of maths routinely encountered in schools and colleges, but experimenting with the other options can be quite instructive. For example, the Factor command includes, among others, the option to specify the coefficients as complex.

The algebra commands available "on a mouse click" from the Menu and Toolbar are:

- Author Expression
- Author Vector
- Author Matrix
- Simplify
- Expand
- Factor
- Approximate
- Substitute
- Solve Expression (algebraically or numerically)
- Solve System (algebraically or numerically)
- Differentiate
- Integrate (definite or indefinite)
- Limit
- Sum
- Product
- Taylor Series

There are many more utility functions which have been built in to Derive to carry out more advanced mathematics. For example, solving differential equations, working with matrices, coordinate geometry, applications of integration, to name but a few. Overall around 500 functions are listed in the Reference Guide, and they range in complexity from

ABS(z)
which returns the modulus of a complex number z, and

PERPENDICULAR(y,x,a)

which returns the equation of the normal to the curve y(x) at the point where x=a, to

FRESNEL_COS_SERIES(z,m)

which generates m+1 terms of the series approximation to the Fresnel cosine integral C(z).

The last example above highlights the fact that Derive can cope with more than enough maths for students in the school and college sector, and is also a serious contender for undergraduate and postgraduate work.

Exact arithmetic means that quantities such as surds, logarithms and so on remain as surds and logarithms, unless they are specifically approximated by decimals. Working in exact form is something that takes a lot of getting used to by students at A-level, and this facility can support such work. High precision arithmetic means that the number of digits can be arbitrarily set, subject only to the power of the computer's processor. This can allow meaningful investigations into topics such as factorials or recurring decimals."

- David Bowers, Suffolk College

New Features of Derive 6

- Display the steps in the simplification of an expression with optional display of transformation rules
- Communicate with TI CAS calculators: import data from and export data to TI-89, TI-92+, Voyage200 calculators
- Make plots dynamic: animate expression plots with slider bars
- Let plots be labelled with defining equations
- Rotate 3D plots with mouse
- Pictures used as background images saved with worksheet
- Customise menus, toolbars, and shortcut keys
- Benefit from numerous other improvements, *including*
  - optional multi-line editing
  - fully scaleable Derive Unicode font
  - state variables saved in DfW files
  - parentheses matching
  - different styles for connected points
  - controllable display of 3D mesh lines
  - controllable point size of 3D data-point plots
  - function for computing Groebner bases

and more, see website

EVALUATE REVIEW

"An extremely powerful tool with extensive functionality. The product will 'scaffold' students as they develop understanding of an algorithm's functioning and its place within mathematics as a problem-solving tool. I found the product highly effective in meeting my intended curriculum needs. In particular, work on balancing equations could not have been replicated using more mainstream programs. The product could be used to introduce topics, allow student exploration to derive rules, or for consolidation tasks."

SCHOOLZONE REVIEW

"A brilliant tool for preparing worksheets because it is so easy to present work in a mathematical format and the ability to embed graphs in the worksheet is a bonus. Students can save their work or print out a hard copy so they have a record of what they have done. **I would say that it does everything the publisher says it will and more. All in all an impressive piece of software."**

TEEM REVIEW

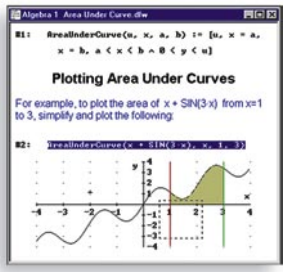
"An excellent tool for mathematics students and teachers at Key Stage 4 and above. It solves numeric and symbolic problems and plots results as 2D or 3D graphs. Derive 6 can be used to solve problems involving calculus, matrices and trigonometry. Because the program avoids the risk that the user will make errors in calculation, it frees the user's mind to concentrate on developing a better understanding of mathematical methods. Derive 6 is supported by an excellent textbook, demo files and videos.

SCIENTIFIC COMPUTING WORLD

"Too good just for students"

Visualise and explore!

Create multiple 2D plots, presented with your maths in worksheets, to analyse and explore equations in Cartesian and polar coordinate systems. Control the aspect ratio, scale and axis definition of your plots, and optionally view the real and imaginary parts. Trace the graph and view precise coordinates of points on the curve.

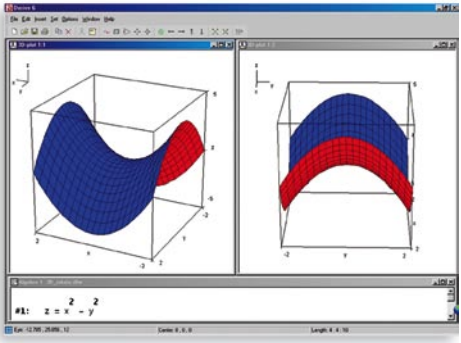


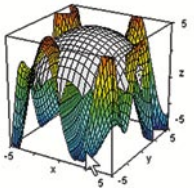
"Derive can cope with more than enough maths for students in the school and college sector, and is also a serious contender for undergraduate and postgraduate work."
- David Bowers
Suffolk College

Create and analyse 3D surfaces

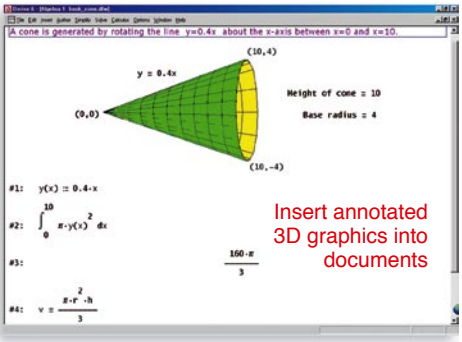
Rotate and zoom multiple shaded 3D surfaces in real-time. 3D surfaces can be created using functions defined parametrically and as sets of data points. Surfaces can be displayed in rectangular, spherical and cylindrical coordinate systems.

Determine coordinates of points on surfaces using movable highlighted cross lines. 3D surfaces can be annotated with descriptive text and exported in popular formats such as TIFF, JPEG, BMP for use in other programs.





Three-dimensional plots can be easily rotated in real-time to investigate their key features. Use arrow buttons or hold down the shift key and rotate with the mouse.



Insert annotated 3D graphics into documents

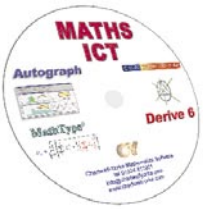
***Try the 30-day Trial from website** or CD-ROM!*

New Version 6.1 System Requirements: Windows 98, ME, 2000, XP (minimum RAM and processor requirements are the same as the operating system requirements). CD-ROM drive, and approximately 10MB of disk space.

Prices: Single Academic User £59 + vat, School or 6th Form Site Licence £299 + vat
School or 6th Form Extended Licence (including Home Use) £599 + vat
FE College Site Licence £1100 + vat, Multiple PC and University Site Licences available.

MATHS ICT

Above: Cabri Geometry II Plus



Free Trial CD-ROM available to teachers

Autograph 3

CABRI GEOMETRY II plus

Derive 6

Developing Number 2

Fathom

INTERACTIVE MATHEMATICS

MathType 5

Mathematical Problem Solving

TinkerPlots

Teach A-Level Maths

How to Order

Orders and enquiries welcomed at the address below either by phone, email, post, fax, or online. Despatch normally same day! Delivery is FREE within the UK. Overseas delivery quotes instantly available.

Please obtain an official Purchase Order number if your institution requires you to do so. We are happy to supply educational institutions with goods together with a 30-day invoice. Personal and overseas customers should send payment with order. Cheques should be payable to "Chartwell-Yorke Ltd." Visa, Mastercard, Solo, Maestro or American Express cards are welcomed.

UK Funding Sources

In addition to your department budget, several government initiatives offer funding.

Curriculum Online and eLearning Credits (eLCs) In England, all the enclosed software (except MathType) can be bought with eLearning Credits (eLCs) via Chartwell-Yorke Ltd, as a Curriculum Online Registered Retailer.

- eLCs are a new form of funding for maintained primary and secondary schools, non-maintained special schools and pupil referral units in England
- eLCs are real cash given to LEAs and allocated to schools under the heading of Standards Fund Grant 618.
- eLCs can only be used for buying Curriculum Online certified digital learning resources such as the software in this catalogue (except MathType).
- Only Curriculum Online registered Retailers, such as Chartwell-Yorke Ltd, can accept eLCs.

The **Professional Bursaries Scheme** offers £500 in the 4th and 5th years of teaching to spend on professional development.

Other UK Funding Sources Various other initiatives can help your funding of ICT, such as **The Standards Fund** and **Classroom 2000** (Northern Ireland). The EiC (Excellence in Cities) programme offers special funding for City Learning Centres, Specialist Schools, Gifted and Talented, Beacon Schools and EiC Action Zones.

Chartwell-Yorke Ltd, 114 High Street, Belmont Village, Bolton, Lancashire, BL7 8AL, England
Tel (+44) (0)1204 811001, Fax (+44) (0)1204 811008
info@chartwellyorke.com http://www.chartwellyorke.com

FAST FREE DELIVERY IN UK