Choosing your calculator

A guide to the right calculator for
SCHOOL, COLLEGE, UNIVERSITY OR BUSINESS

Why this Guide has been produced

Most manufacturers design their products and then decide on ways to advertise their usefulness.

Commodore have reversed this process by first probing many individual situations to find out the features really required and then designing the most comprehensive range of calculators available, to suit everyone from the student to the professional mathematician.

This guide has been written to help you decide on what type of machine to purchase. We hope that you will find it interesting, fair and useful – the choice of who's machine to purchase remains yours however, we challenge you to find a more personally dedicated machine than the one we recommend for your particular situation.

Contents

For General School Work

The Commodore LC 925

The ideal calculator to develop mathematical skills in the young student. Rugged design for everyday use with extra-large keys and 8-digit liquid crystal display which is clearly visible for hand held or desk top use. Many months of operation from 2×1·5 V, AA size batteries (not included).

Key features

[+] [−] [×] [÷] Basic functions

[%] [Δ %] Percent and percentage difference

[M+] [M−] [M RC] Memory with direct addition and subtraction

[√x] Square root

[+/−] Change sign

PLUS

- Automatic constant
- Power function
- Clear entry
- Full one year warranty

How to solve a problem using memory and percent key

Problem
You buy 12 items at £1·09 and 31 at £2·16. What is the total payable after adding 8% VAT?

Solution

12 [×] 1·09 [M+] 31 [×] 2·16

[M+] [M RC] [+] 8 [%]

M 86.4432

The answer is £86·44.

For 'O'-Levels and Sixth Form work

This guide to 'O'-Level requirements was written straight from 'O'-Level candidates' comments, schools and colleges recommendations and brought together by Commodore's design experience.

For 'O'-Levels and Sixth Form work your Calculator should have:

To replace mathematical tables

1. Sine, cosine, tangent and inverses
2. Log to base 10, log to base e, antilog, exponental function
3. Square, square root, reciprocal
4. Degrees to radians angle conversion

Useful features to save time in exams

5. Brackets
6. Scientific notation
7. Powers and roots
8. Pi and percentage

Special functions to solve difficult problems

9. More than one memory to avoid having to note down intermediate results
10. Polar/rectangular co-ordinate conversion (adds vectors and solves Pythagoras in 2 key strokes)
11. Mean and standard deviation with 2 formulae to cope with all syllabuses (mean is used to find averages and standard deviation is useful to analyse experimental results)

The Commodore SR4912

An ideal choice for 'O'-Level and Sixth Form work. It meets all the necessary requirements:

1 [sin] [cos] [tan] [inv]

2 [log] [ln] [10^x] [e^x]

3 [x^2] [$\sqrt{x}$] [$1/x$]

4 [d↔r]

5 [(] [)] Two levels

6 [EE]

7 [y^x] [$x\sqrt{y}$] [$x \rightleftharpoons y$]

8 [π] [%]

9 3 memories with full memory arithmetic.
[STO] [RCL] [M+] [M×] [XCH]

10 [P↔R]

11 [$\bar{x}n$] [$\bar{x}$] Two formulae [S] and [S']

Mains adaptor optional extra

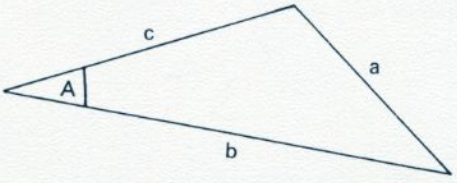
PLUS

● Full 8 + 2 digit LED display for power and reliability ● Degrees, Radians or Gradians angle modes ● Standard PP3 battery power supply (not included) ● Battery saving circuit for economy ● Mains adaptor available at extra cost ● Full 1 year parts and labour warranty.

How to solve a typical 'O'-Level problem using the SR4912

Problem

A = 27° b = 11·3 cm c = 7·9 cm Find a?



This would obviously be done using the Cosine Rule:

$a = \sqrt{b^2 + c^2 - 2bc \cos A}$

Solution

By using memories, b and c need only be entered once and the brackets enable entry in the most logical order.

11·3 [M+] 1 [x^2] [+] 7·9 [M+] 2
[x^2] [−] [(] 2 [×] [RCL] 1
[×] [RCL] 2 [×] 27 [cos] [)]
[=] [$\sqrt{x}$] **5.5695328**

The answer is 5.57 cm.

30 seconds' work can replace a 10 minute problem.

For 'A'-Levels and the years ahead

Based on advice from actual 'A'-Level students, reports from educational establishments and our own experience in calculator design, we have put together the following guide to help you choose a calculator for your 'A'-Levels which will also serve you as your career develops.

For 'A'-Level use and later at University or in a Science Career your Calculator should have:

For the Mathematics Classroom:

1. Integration of a graph
2. Complex arithmetic
3. Factorials, permutations, combinations and binomial function
4. Hours/minutes/seconds format
5. Hyperbolics
6. Polar/rectangular co-ordinate conversion

For the Physics, Chemistry or Biology Laboratory

7. Linear regression – for graph plotting/analysis
8. Mean and standard deviation (both formulae)
9. Metric conversions
10. Normal (Gaussian) and Poisson distributions

For general problem solving

11. Several memories with arithmetic (for number manipulation)
12. At least two sets of brackets (for equation solving)
13. Percent and percentage difference
14. Full scientific keyboard (trigs, logs, powers, roots, etc.)

The Commodore SR9190R

An ideal choice for 'A'-Level work. It more than meets the necessary requirements:

1. [∫]
2. [j÷] [j×] [j−] [j+]
3. [n!] [P n m] [C n m] [BINOM]
4. [hms] [d (dms)]
5. [sinh] [cosh] [tanh]
6. [→P] [→R]
7. [slope] [intcp] [x i] [y i] [x̂] [ŷ]
8. [Xn] [x̄] [s] [s']
9. [(°F)°C] [(gal)l] [(oz)g] etc.
10. [GAUSS] [POISS] [α] [β]
11. The SR9190R contains 9 full memories with arithmetic [STOn] [RMn] [+Mn] [×Mn] [XCHn]
12. 3 sets of parenthesis (brackets). [(((] [)))]
13. [%] [Δ %]
14. All remaining functions including

    [sin] [cos] [tan] [ln] [log]

    [e^x] [10^x] [x^2] [√x]

    and many more (see photograph).

Free mains adaptor

PLUS

● 10 + 2 digit LED display for power and reliability ● 14 digit internal accuracy ● Rechargeable for economy ● Over 100 functions on 49 well spaced keys ● Robust casing ● 1 year full parts and labour warranty.

How to solve a typical 'A'-Level problem using the SR9190R

Problem
If 10 coins are thrown, what is the probability of getting exactly 3 heads?

Solution
Using binomical distribution:

10 [α] 3 [β] 0·5 [F] [BINOM]

0.1171875

The answer is approx 12%.

PROGRAMMING - SOME

Although programmable calculators are becoming increasingly popular, many people are still unsure of exactly what they are – and how useful they can be. We have printed some answers to the most common questions and we hope that this will help you to decide whether to invest in a programmable calculator.

Q *What is a programme?*

A A programme is a sequence of key strokes entered into the calculator by you and remembered internally for later operation.

Q *What is the advantage of programming over manual operation?*

A If you have a particular type of problem which you need to repeat more than once (perhaps using different data each time) then a programme will both speed up the calculation and avoid errors due to mis-keying.

Q *Can a programmable calculator solve problems which are impractical on a manual calculator?*

A Yes. By means of a repetitive loop, a particular sequence of operations can be repeated as many times as required on the touch of one key – giving computer like ability for professional use. Also it is possible to programme a decision (called a conditional branch) whereby the calculator can be told to do different things according to the outcome of a previous calculation.

QUESTIONS ANSWERED

Q *How important are the standard pre-programmed functions on the keyboard of a programmable calculator?*

A Very. There will be many quick problems which you will want to solve manually and hence the need for a large keyboard with plenty of advanced versatile functions is obvious. In addition, these functions – if used inside a programme – can considerably speed up and shorten the length of the programme.

Q *What special programming features should I look out for?*

A
1. A RUN and STOP function to execute the programme.
2. A 'direct branch' in the form of a GOTO statement to form repetitive loops and branches.
3. A 'conditional branch' such as a SKIP on result. This enables the calculator to make decisions.
4. Full reviewing and editing STEP by STEP.

Q *What sort of application could I put my programmable calculator to?*

A
- Solving quadratic equations
- Complex arithmetic
- Matrixes and determinants
- Vector problems
- Differential equations
- Co-ordinate geometry
- Statistical analysis
- Probability calculations
- Series

In fact, virtually any professional calculation you want!

For an introduction to Programming

For the many people (at school, college or work) who are considering the purchase of a programmable machine, the most important question is:

'How easy is it to programme the calculator?"

For the best introduction to programming, a suitable machine will be programmed in a similar way to manual use – not in a complicated computer-like language.

Conditional branching, which is perhaps the most difficult function to master, will be made much easier by explicitly labelled keys. Some machines offer more than one type of conditional branch key and for the newcomer, the more the better.

Finally, remembering that such a calculator will be used manually as well, a full scientific keyboard is essential. For versatility a good machine will contain the following as a minimum:

1 Trig functions
2 Logs to base 10 and base e
3 Square, square root and reciprocal
4 Memory with memory arithmetic
5 Degrees / radians operation and π

The Commodore P50

An excellent scientific calculator with a useful and versatile programming capability.

AS A SCIENTIFIC CALCULATOR

All the functions listed opposite

PLUS: Factorials [n!]

Gradians operation [gra]

Integer round off function [INT]

AS A VERSATILE PROGRAMMING TOOL

[lrn] Learn mode for entering programmes

[R/S] RUN/STOP key

[GOTO] Direct branch

[SSTP] Single step for reviewing and editing programmes

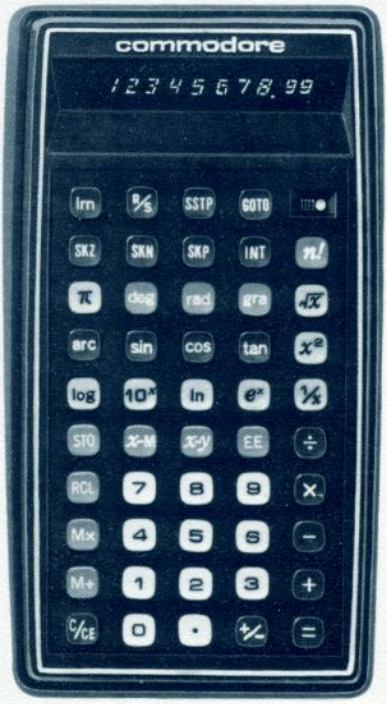
Plus 3 Conditional Branches

[SKZ] Skip on zero result

[SKN] Skip on negative result

[SKP] Skip on positive result

24 Merged programme steps. (Under certain circumstances a merged step can hold more than one key stroke giving a larger effective programme store.)



Mains adaptor optional extra

PLUS

● 8 + 2 digit LED display for accuracy ● Degrees, Radians or Gradians angle modes ● Standard PP3 battery power supply (not included) ● Battery saving circuit for economy ● Mains adaptor available at optional extra cost ● Full 1 year parts and labour warranty.

Look how easy it is to load and run a programme

Find the areas of circles radius 2, 3·5 and 4·7.

Programme

[lrn] [x²] [X] [π] [=]

[R/S] [GOTO] 00 [lrn]

Execute

[GOTO]	00	
2	[R/S]	12.566371
3·5	[R/S]	38.48451
4·7	[R/S]	69.397782

Continue with any examples.

For Degree and Professional use

For the Engineer, Designer, Scientist or Student who is looking for a professional type programmable, perhaps as an upgrade from a good scientific or basic programmable machine, his main concern will be the capabilities and versatility of the calculator.

For all forms of data manipulation and equation solving, several sets of brackets and a large number of memories (with full memory arithmetic) are essential. Whilst a reasonable number of programme steps (say at least 50) is important, the number of preprogrammed functions is the main factor in determining the maximum size of programme possible. For example, a machine with a linear regression function can perform a curve fitting exercise in approx. 50 less steps than one without linear regression.

Reviewing and editing is necessarily a major part of writing complex programmes and the following features (in addition to those on page 9) will save considerable time and effort:

1 Viewing the contents of the programme step by step
2 Back step function to recheck on an entry
3 Instant deletion of any step
4 Clearing of whole programme or sub programme without switching off
5 Automatic overwrite
6 Execution of programme, step by step
7 Execution of sub programmes as required

The Commodore PR100

An excellent programmable calculator with a host of advanced pre-programmed functions. It meets all the requirements of a truly professional machine:

Programming features:

72 individual programme steps.

3 position programme switch:

CLR LD RUN

CLEAR, LOAD, RUN.

5 programme control keys:

BACK STEP R/S GOTO SKIP

These combine to give 12 programming functions including *all* those recommended on pages 9 and 12.

Pre-programmed features:

The PR100 performs most of the functions recommended for 'A'-Level work including:

Free mains adaptor

Linear regression Ci Cs slope intcp

Mean and standard deviation $\bar{x}n$ $\bar{x}$ s s' delxn

Hyperbolics sinh cosh tanh

Hours, minutes, seconds format hms

Polar, cartesian, spherical Co-ordinate conversions R→P C→S

Permutations, combinations, factorials P^n_m C^n_m n!

PLUS

● Full scientific keyboard and more ● 10 memories with full arithmetic ● 4 levels of parentheses ● 8 + 2 digit LED display ● Rechargeable with free mains adaptor ● Full 1 year parts and labour warranty

On the next page are two powerful PR100 applications

Typical applications for the versatile PR100

1 MANUAL EXAMPLE

A length of wire is being stretched as follows:

STRESS (MN/m²)	5·0	6·0	7·0
LENGTH (m)	5·039	5·048	5·056

Assuming Hooke's law is obeyed, find the Youngs modulus for the material (to 1 decimal place) and the unstretched length (to 3 decimal places). Use the linear regression function.

F CA F FP 1	0·0	(Clear and set for 1 decimal point)
5 Ci 5·039 Ci	1·0	(No. of points entered is displayed)
6 Ci 5·048 Ci	2·0	
7 Ci 5·056 Ci	3·0	
F slope F 1/x	117.6	

The Youngs modulus for the material is 117·6 MN/m²

F intcp F FP 3 ..... 4.997

The unstretched length of wire is 4·997 metres

2 PROGRAMMING EXAMPLE

Find the sums to infinity of the following geometric series:

A 1 + 0·7 + ...

B 3 + 2 + ...

C 2 + 1·32 + ...

Using the formula: $500 = \frac{a_1^2}{a_1 - a_2}$

Programme

Switch 'off' and 'on'

Switch to 'LOAD'

M 1 y^x 2 ÷ (MR 1 − R/S =

Execute

Switch to 'RUN'

GOTO 00

A 1 R/S 0·7 R/S ..... 3.33 *Answer*

B 3 R/S 2 R/S ..... 9.00 *Answer*

C 2 R/S 1·32 R/S ..... 5.88 *Answer*

Continue with any examples.

Specialist Machines—

Tailor made for your application

Whilst we have catered for most people's needs with our range of calculators featured earlier in this guide, there are certain professions which require very specialised machines.

People such as businessmen, statisticians, mathematicians and engineers, who need to perform advanced calculations quickly and make decisions from those answers, have had to use computers to solve their problems.

Commodore now have four dedicated machines, each tailor-made to do a job:

F4902	For Business and Financial decisions
S61	For Statistical work
M55	For Engineers and advanced-Mathematicians
N60	For Navigation

Each one has a host of advanced pre-programmed functions for maximum efficiency and yet cost little more than standard machines.

We can only begin to demonstrate the versatility and capability of each machine in the next few pages, however, we hope it will become clear that these machines are designed for you – and to save you time and money.

Specially for Business/Financial use

The Commodore F4902

'Decision Maker'

With the trend towards decision making on a mathematical basis and the need for basic statistical analysis of figures, the businessman is becoming a prime user of calculators. Despite this, his real requirements have largely been ignored by the manufacturers, who have concentrated on scientific machines alone. Commodore however, have changed this by bringing out a low cost specialised business machine.

Mains adaptor optional extra

- **For Financial Calculations**
  Compound interest including loans, annuities, mortages, cash flow, etc.
  Cost, sell and margin calculations.

- **For Statistical Analysis**
  Mean and standard deviation (2 formulae)
  Linear regression for trend analysis
  Natural logarithm and exponental functions

- **For Everyday Business Use**
  Four key memory
  Percent and percentage difference
  Power functions
  Brackets

PLUS

● Extra high capacity 11 digit LED display ● Standard PP3 battery (not included) ● Battery saving circuit for economy ● Optional mains adaptor ● Full 1 Year parts and labour warranty ● Comprehensive instructional guide to business calculations.

Just one example of the power of the F4902

Problem

If £10,000 is invested at 6% per annum for 4 years, what will it be worth at the end?

Solution

10,000 [PV] 6 [*i*] 4 [N]
[F] [FV] 12624.769598

It will be worth £12,624.77

Specially for Statistical Work

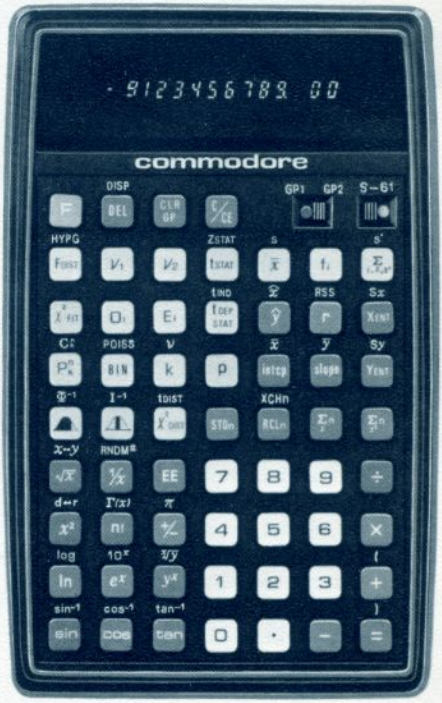
The Commodore S61

'Statistician'

Our brief for this machine was defined by many letters from statisticians and it was only designed after an extensive survey as to which functions are most needed. Consequently the S61 is without doubt the best machine on the market for anyone involved in quality control, research or directly with statistics. After all it was designed to save you time, money and effort.

Here are just some of the functions offered to you:

- CHI Squared distribution
- Test statistics
- Linear regression
- Mean and standard deviation
- F, t, Hypergeometric and Gaussian distributions
- 8 memories and full scientific keyboard
- 14 digit green display.



Free mains adaptor

Regrettably, we have only space for one example but think how long it would take you to do this by hand.

Problem

Quality Control

If a batch of 85 items contains 7 defects and 10 items are drawn from the batch, what is the probability that exactly 1 of the 10 will be defective?

Solution

The answer lies in Hypergeometric distribution

78 [V_2] 7 [V_1] 1 [P] 10 [F]

[HYPG] 4.0795336-01

There is a 40% probability that one of the 10 items will be defective.

Specially for Advanced Mathematical and Engineering work:

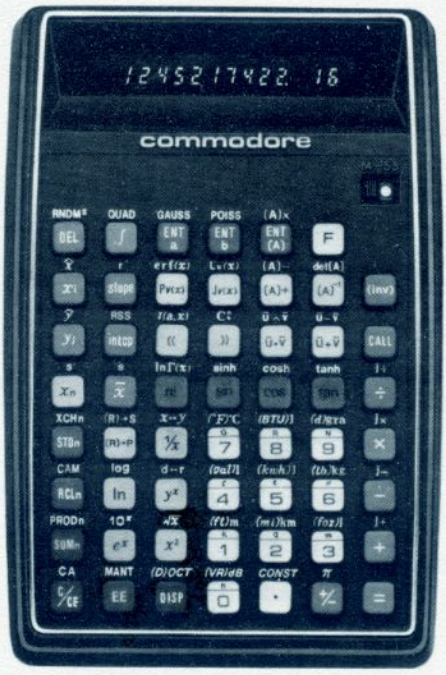
The Commodore M55

'Mathematician'

There are many calculators on the market with this label. Generally this is because a manufacturer has added a couple of mathematical functions and for a few extra pounds called it a separate machine.

Again Commodore rejected this method and designed a machine from scratch. Our policy was – we won't work to a price – we decide what is needed first. Even so the final result is very good value for money.

The M55 is a professional machine containing more readily available knowledge than many scientific textbooks.



Free mains adaptor

Examine what we have built into one calculator:

- Vector arithmetic (including cross products)
- Matrix arithmetic (including determinant)
- Complex arithmetic
- Quadratic equations (including complex roots)
- Linear regression (with correlation)
- Integration
- Random numbers
- Metric conversions
- Universal constants
- 6 memories
- Full scientific keyboard
- Rechargeable

We could spend pages demonstrating the usefulness but we trust that anyone involved in science maths or engineering will realise this.

Here is a typical problem which we designed our calculator to do quickly and efficiently.

Problem

Find the complex roots to this equation:

$3x^2 - 2x + 7 = 0$

Solution

C/CE 3 ENTa 2 +/− ENTb 7 F

QUAD 3.333333333–01

CALL 2 ..... 1.490711985

Therefore roots are:
0·333 + 1·4907j and 0·333 – 1·4907j
where $j = \sqrt{-1}$

Specially for Navigation:

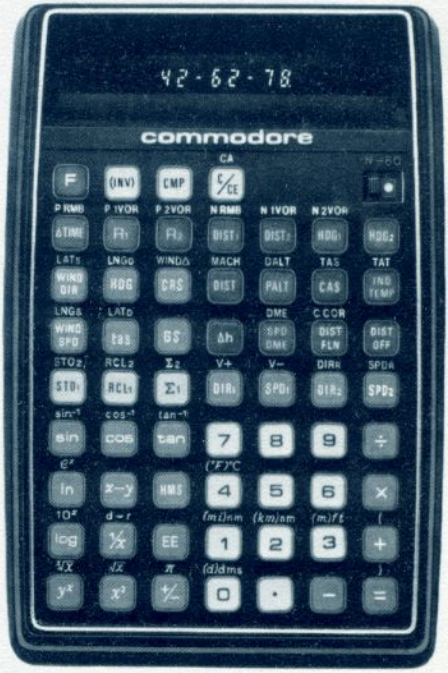
The Commodore N60

'Navigator'

A calculator designed specially for those involved in any form of navigation. Each navigational requirement has been pre-programmed into the N60 to use the minimum of entries.
The N60 can be operated by anyone knowing the basics of navigation – a truly dedicated machine.

Here are some of the instant navigation functions on the N60:

- Solution of the wind triangle
- Navigation by Rhumb line
- Position by Rhumb line
- Navigation by 1 or 2 VOR Beacons
- DME speed correction
- Off course correction
- True air speed calculation
- True air temperature calculation
- Density altitude calculation
- Mach number
- Vector addition and subtraction
- Degrees/Minutes/Seconds format



Free mains adaptor

While the N60 was designed primarily for aeronautical use, many of the navigational principles apply to marine use also. Some functions (such as navigation by Rhumb line) require no alteration, while others simply require a change in notation.

See how quickly the N60 deals with this problem.

Problem

Given that the wind speed is 40 knots in a direction 235°. What heading must you steer to obtain a course over the ground of 185° at a true air speed of 300 knots?

Solution

F [WIND Δ] 40 [WIND SPD] 235 [WIND DIR] 185

[CRS] 300 [tas] [CMP] **190–51–45**

The heading is 190° 51'.

Comparison Table

Now that you have read the sections relevant to your situation and perhaps have almost decided on the best scientific or specialist calculator for you, here are some simple comparisons:

	FUNCTIONS AVAILABLE	4912	9190	P50	PR 100	4902	S61	M55
Basic Scientific Pack	Sin, Cos, Tan, Inverses, ln, Log, e^x, 10^x, EE, +/−, 1/x, x, $\sqrt{y}$, π, at least one full memory	✓	✓	✓	✓		✓	✓
Exam Problem Solving Pack	Mean and standard deviation, polar/rectangular, multiple memories, x⟷y, y^x, d⟷r, brackets	✓	✓		✓			✓
Advanced Problem Solving Pack	Linear regression, hyperbolics, combinations and factorials, metric conversions		✓		✓			✓
Intermediate Mathematics Pack	Integration, complex arithmetic permutations, binomial distribution		✓					✓
Intermediate Statistics Pack	Gaussian and poisson distribution Gamma function		✓				✓	
Programming Pack	Direct and conditional branching, editing and reviewing, RUN/STOP			✓	✓			
Advanced Mathematics Pack	See M55 section on page 18							✓
Advanced Statistics Pack	See S61 section on page 17						✓	
Business/Finance Pack	See F4902 section on page 16					✓		
Battery operated	(Mains adaptor available as extra)	✓		✓		✓		
Rechargeable	(With free mains adaptor)		✓		✓		✓	✓
Memories	Number Levels of brackets	3 2	9 3	1	10 4	1 1	8 1	6 2
Digits	Red/Green Number (Mantissa and Exponent)	R 8+2	R 10+2	R 8+2	R 8+2	R 11	G 10+2	G 10+2
Programme Steps	Number (*Merged)			*24	72			
Metric Conversions	Number		9		4			8

Other Commodore Calculators

The Commodore LC63SR

LCD Scientific

8+2-digit liquid crystal display scientific. Functions include logs and trig, hyperbolics, standard deviation, memory, two levels of parenthesis, polar/rectangular conversion and full complement of power keys. Long-life batteries included.

The Commodore CIL 500

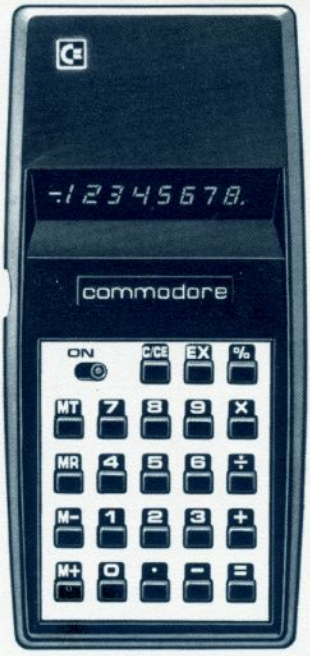
LCD Wallet Model

8-digit liquid crystal display with full memory, automatic constant, percent, square root and a special delta percent key with the ability to compute instant profits and discount percentage change. Long-life batteries included. Supplied in an attractive wallet.

The Commodore 797/7923

Budget Priced Model

8 digit LED display with 4 key memory, add-on discount percent key and exchange key. A full range of every day functions at a very low price. Uses 9 volt battery (not included), AC adaptor available at optional extra cost.



The Commodore CIL 80

Mini-Card LCD

A beautifully designed miniature calculator, no bigger than a credit card yet with well spaced keys and 8-digit liquid crystal display. Full memory, automatic constant and percent key. Long-life batteries included. Supplied in attractive card case.

The Commodore CIL 100 *(not illustrated)*

Mini-Card LCD

This model combines most of the features of the CIL 80 plus square root and delta percent keys. The keyboard is well spaced and the display is positioned conventionally at the top of the calculator. Extra long life lithium battery included. Supplied in attractive card case.

The Commodore
CIL 2000 CQ-AI
Calculator – Clock with Alarm and Stop-Watch

Eight-digit liquid crystal display with full memory, percent and square root keys. Built in quartz clock with audible alarm. Stop-watch feature which shows elapsed time and lap time in hours, minutes, seconds and one-tenth seconds. Extra long life lithium battery included. Supplied in an attractive wallet.

Date and time display illustrated

Calculator display illustrated

Both models C1L 2000 and C1L 2500 have a versatile 3 mode display.

The photograph of the C1L 2000 (top) is shown with the time displayed in hours and minutes together with the date and day of the week.

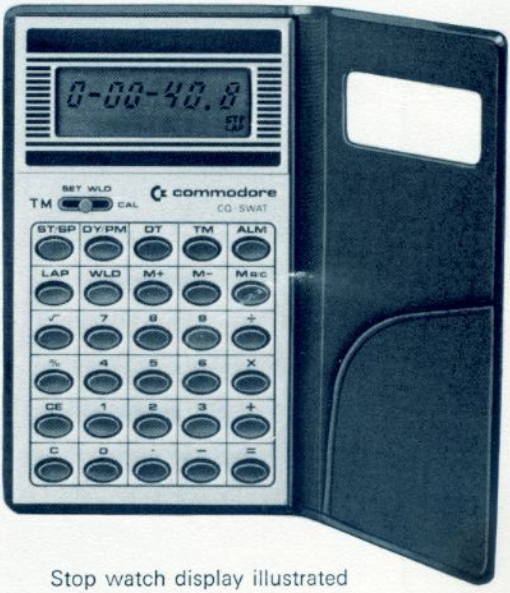
The C1L 2500 (bottom) shows the stop watch mode with hours, minutes, seconds and one-tenth seconds displayed.

As well as these display options both models display the calculator mode as shown in the inset.

Signals showing ALARM, STP (stop watch) and LAP are displayed in the relevant modes.

The Commodore
CIL 2500 CQ-SWAT
World-time Calculator-Clock with 2 Alarms and Stop-Watch

The CIL 2500 CQ-SWAT includes most of the features of model CIL 2000 CQ-AI plus an additional alarm, a count-down timer and time keeping in three time zones (i.e. Local time, Hong Kong time and New York time). Extra long life lithium battery included. Supplied in an attractive wallet.



Stop watch display illustrated

The Commodore's philosophy

PET 2001 Computor

Commodore (CBM) has been in business for over 22 years during which time it has established an enviable reputation for outstanding value and innovation – none better illustrated than by the PET 2001 computer. Already recognised as a leader in advanced consumer electronics Commodore has further increased its worldwide technical resources. These now include in-house microprocessor technology and production through its own MOS Technology subsidiary.

These special strengths have been combined to produce a truly outstanding product – the PET 2001 computer. A personal computer that operates anywhere by simply plugging into the mains. An extremely powerful self-contained tool at the command of its owner yet capable of even further expansion.

Quite portable, very affordable and unbelievably versatile, the PET 2001 computer may well be a lifetime investment.

Further details available upon request.

Stockist:

Commodore Business Machines (UK), Limited

Consumer Products Division
Leigh Road
Slough
Berkshire
Telephone: Slough 71237
(STD code 0753)

Designed and Printed in England by Hopkins & Bailey Ltd., Birmingham B12 0YS

Model change insert for

'Choosing your Calculator' guide

Since the printing of this booklet we have introduced a number of new models as follows:

CIL 30 — 8 digit liquid crystal display personal calculator with full 4 key memory, percent and square root keys. Electronic switching constant and auto shut off feature. Uses 2 x 1.5v AAA size batteries (supplied). Dimensions 65mm x 13 x 110.

LC 4512 — 8 + 2 digit liquid crystal display scientific with 40 keys offering a host of scientific functions. Specification similar to model LC 63SR (described on page 21 of guide) but with angled display and rubber feet for hand-held or desk top use. Uses 2 x 1.5v AA size batteries (not supplied). Dimensions 160mm x 78 x 10.

CIL 55PD — Portable plain paper printing calculator with 10 digit LCD display. 4 key memory, percent, square root, mark-up, non-add and subtotal keys. Uses 4 x 1.5v AA size batteries (not supplied) or mains operation from adaptor.

Also, please note that the following models are now out of production:

SR 4912
SR 9190R
P 50
PR 100

COMMODORE CONSUMER PRODUCT DIVISION - APRIL, 1980

CASH WITH ORDER PRICE LIST CONTINUED.

MODEL	DESCRIPTION	£ (Incl. VAT)
SENSOR - SAVANT WATCHES.		
A comprehensive range of 'Jewellery style' digitals from £9.95		
CALCULATORS.		
797 (or similar)	LED Memory + Percent.	4.95
CIL 30	LCD Memory, Percent + Square root	5.95
GL 996R	Rechargeable green display, percent	7.95
CIL 80	LCD Mini card	7.95
CIL 500	LCD Wallet model	7.95
LC 925	LCD Everyday model	7.95
CIL 2000/CQ-A1	LCD Clock calculator	13.95
CIL 2500/SWAT	LCD Clock calculator with world time	15.95
F 4902	LED Financial	11.95
LC63SR	LCD Slim scientific	14.95
LC4512	LCD Scientific	14.95
S61	Green Display statistical scientific	39.95
SR4921	Reverse Polish logic scientific	9.95
CIL 55PD	Plain paper mini-printer with LCD	49.95
C12 Desk	Green desk display	29.95
150P	Plain paper desk printer	45.95
151P	Plain paper desk printer with memory	47.95
Adaptors.		3.95
CHESS COMPUTER		
Chessmate 1	8 levels of difficulty	59.95

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All prices include V.A.T.

All models are offered subject to availability and we recommend you telephone our sales office for latest delivery information before ordering.

E. & O.E.

April 1980