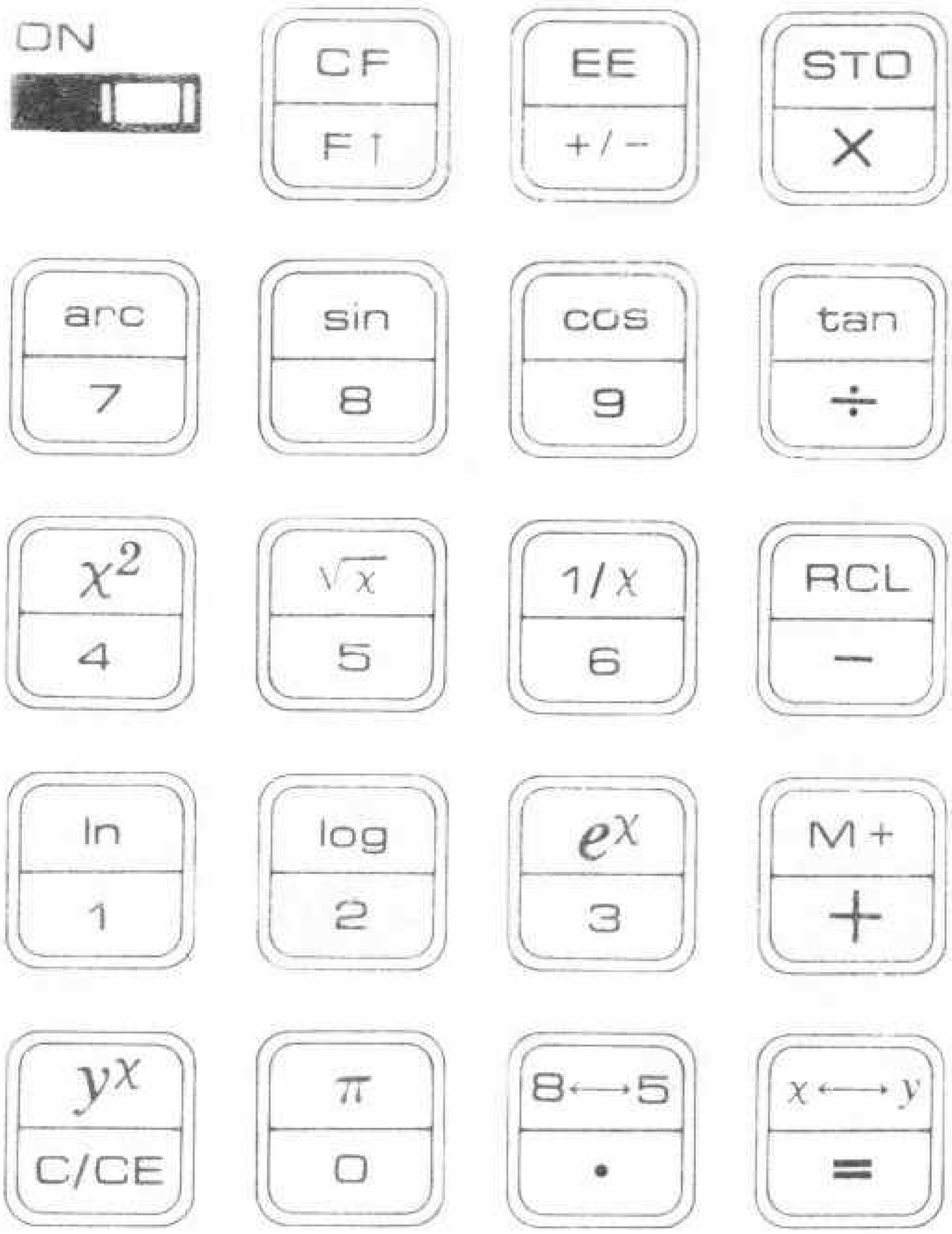

commodore

SR7919D
Scientific Notation Calculator

Your scientific notation calculator is a 19-key, 28 function machine. Once you have become familiar with its keyboard and its versatile display, you will be able to perform a broad range of basic and advanced calculations.

1. The Display

Floating Point Format

— 1 2 3 4 5 6 7 8 .

Sign of number — 8 digit number (mantissa)

Scientific Notation

1 2 3 . 4 5 — 9 9

Sign of number	5 digit mantissa	Sign of exponent	2 digit exponent

If the size of a result exceeds the 8 digit capacity of the floating point format, the unit will automatically display the result in scientific notation.

2. Use of the 8⟷5 Key

If a number is displayed in scientific notation with a 5 digit mantissa, the full 8 digit mantissa is stored and can be displayed with the **8⟷5** key.

1	÷	7000	=	**Read 1.4285-04**
F↑	**8⟷5**			**Read 1.4285714**

3. F↑ Upper Case Function Key

Each key on your machine has an upper case inscription. To release this function, press **F↑** key. Thus, to enter 6000 in scientific notation we must employ the "Exponent Entry" key as follows:

6 **F↑** **EE** 3 **Read 6. 03 (6×10^3)**

Note: After pressing the **F↑** , a signal light will appear at the extreme left of the display. This advises you that your next entry will be an upper case function: •

If, at this time, you choose not to proceed with an upper case operation, press the **CF** Clear Function Key (it is the upper case inscription on the Function Key) to cancel it.

4. The extreme left position on the display is reserved for symbols.

a) Sign of mantissa. Minus sign followed by the mantissa denotes negative number. No signal denotes positive number.

−123

123

b) Minus sign without digits following is the time-out signal to save battery life.

−

To recall displayed data, press next key in your calculation sequence or = Key.

c) Error signals:
Positive number error occurs when calculation exceeds capacity or an improper operation is performed:

0 **F↑** **1/x** **Γ** 0.

Negative number error occurs under same conditions:

C 2 **+/−** **F↑** **√x** **F** 1.4142136

There are two other positions on the display where symbols may appear.

d) Power On. When your calculator is switched "ON," your display will show **0.** at the extreme right hand side of the window.

Note: "Power On" clears all registers including the memory.

e) The sign of the mantissa may be changed before, during or after the data is entered by pressing the sign change key **+/−** . The signal will appear at the far left (see Paragraph 4a). However, if the **+/−** key is pressed after

the **EE** key, the value of the exponent is altered. This symbol appears to the immediate left of the 2 digit exponent field.

5. Logic

Your calculator uses algebraic logic. This simply means that you may enter examples just as you would write them down:

Example

$(2 \times 3 + 5)^3 = ?$

Press									**Read**
2	×	3	+	5	F↑	Y^X	3	=	**1331.**

6. Clear

The $\frac{Y^X}{C/CE}$ Key is the only three function key on your calculator. If pressed once, it "erases" your last entry, permitting you to correct a mistake without beginning all over again.

e.g., $4 \times 3 = 12$

Error

↓

4	×	2	**C/CE**	3	=	12

If pressed twice prior to the completion of an example, or once after

the result key **=** , the **C/CE** key clears all registers except Memory. The third application of this key is its upper register function. As shown in paragraph 5, the **Y^X** function raises the base to a power.

7. Memory

STO Memory Register Key

The key sequence **F↑** **STO** commands the calculator to copy the value currently on the display into memory.

RCL Recall Memory Key

The key sequence **F↑** **RCL** copies data stored in the memory on the display. Any data on display prior to recall is lost, while the value stored in memory remains unaltered and may be recalled later on.

To Clear Memory:

Data in memory is automatically replaced by new data stored by the **F↑** **STO** key sequence. This method is referred to as, "writing over existing data."

The memory register can also be cleared by storing zero:

C **F↑** **STO**

M+ Memory Accumulation

Adding both positive and negative values to stored data is accomplished by the key sequence:

F↑ M+

8. x⟷y Exchange Register Key

This upper register function allows you to exchange the data currently on display with the previous entry or subtotal. It is used for factor reversal and checking previous entries.

9. 1/x Reciprocal

Computes and displays inverse of a number currently on display.

Enter		**Read**
25	**F↑ 1/x**	**0.04**

10. π Pi Key

An upper register function which causes the entry and display of the constant Pi.

11. Examples

A) Use of x^2 and $\sqrt{x}$

Find the hypotenuse of a triangle whose sides measure 3 and 4.

Enter						**Read**
C	3	**F↑**	x^2	+	4	
F↑	x^2	=	**F↑**	$\sqrt{x}$		**5.**

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B) Use of **Y^X**

Raise 2^{17} = ? **Read**

C 2 **F↑** **Y^X** 17 **=** **131072.**

C) Use of π and **8⟷5**

Find the circumference of a circle whose radius is 99,999,999 meters.

Formula $C = 2\pi r$

Enter

C 2 **×** **F↑** π **×** 99999999 **=**

Read

6.2831 08

The true position of the decimal is 8 places to the right. This is accomplished by writing the number and adding zeros:

628310000.

However, we may also see three of the missing digits.

Press **F↑** **8⟷5** **Read** 6.2831**853**

(Remember the true position of the decimal. Rewrite: 62831**8530.**)

D. Use of Common Log and Inverse Common Log Functions

LOG

Calculate $10^{(\text{Log } 2.1 + \text{Log } 3.2)}$

Enter

2.1 **F↑ LOG +** 3.2 **F↑ LOG**

= F↑ STO **Read 0.8273693**

10 **F↑ Y^X F↑ RCL =** **6.7200004**

(inverse function)

E. Use of e^x

Calculate the hyperbolic sine of .5

Equation $\sinh x = \frac{e^x - e^{-x}}{2}$

Enter

.5 **F↑ e^x −** .5 **+/− F↑ e^x**

÷ 2 = **Read 0.5210953**

F. Use of Trigonometric Keys

arc sin cos tan

Enter	**Read**
30 **F↑ sin**	**0.5**
F↑ arc sin	**30.**
120 F↑ cos	**−0.5**
F↑ arc cos	**120.**
45 F↑ tan	**1.**
F↑ arc tan	**45.**

12. Operating Accuracy

Functions +, −, ×, ÷, 1/x, x^2, $\sqrt{x}$

are subject to a roundoff error of ± one count in the least significant eighth digit. Other functions are accurate to ± 2 counts in the eighth digit.

13. Error Conditions

An error condition results when an improper operation is performed or when a result overflows or underflows the capacity of the calculator. When an error signal occurs (see paragraph 4C) press clear key and begin again.

Overflow:
Computed result is greater than 9.9999999×10^{99}

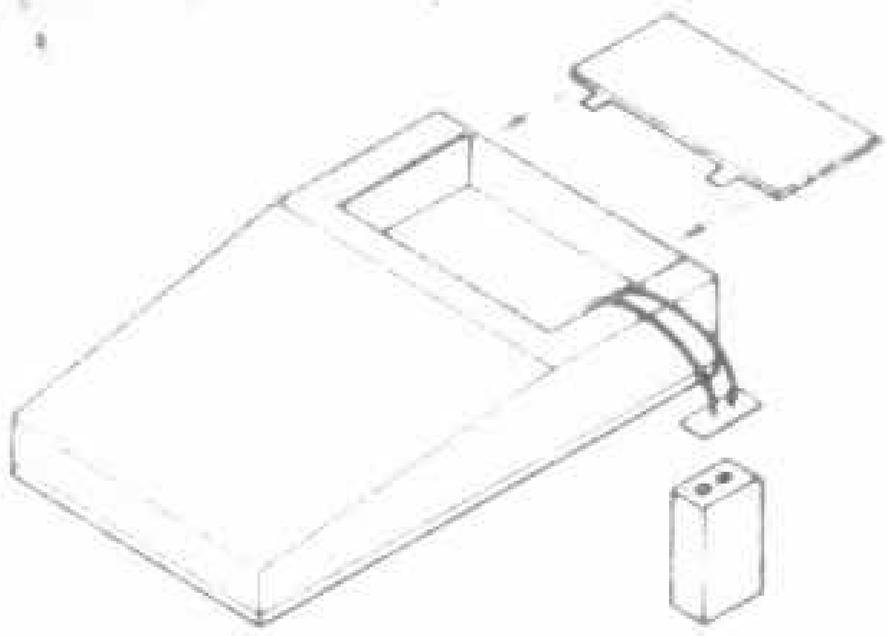
Underflow:
Computed result is less than 1.0×10^{-99}

14. Improper Operation

$x \div y$	where $Y = 0$
y^x	where $Y < 0$
$\sqrt{x}$	where $X < 0$
$1/x$	where $X = 0$
ln X	where $X \leq 0$
Log X	where $X \leq 0$
arc sin x	where $X > 1$
arc cos x	where $X > 1$

Disposable Battery Model (D)

Your calculator uses a standard nine-volt battery type 006P available at most drug, department and camera stores.



Experience has proven that batteries packed with machines age considerably. To protect your calculator, we have omitted the battery from the package. Please ask your dealer for a fresh, new power cell. In the event your brand new machine does not function, please check the battery first.

Please note. Machines with disposable batteries will not recharge. See battery replacement details above.

AC Adapter Operation

It is recommended that you unsnap and remove the battery from your machine before inserting the adapter jack.

Data printed with this manual is supplied without representation or warranty of any kind. Commodore (CBM) therefore assumes no responsibility and shall have no liability, consequential or otherwise, of any kind arising from the use of key indexing procedures or any part thereof.

APPENDIX

Use proper Commodore/CBM adapter for AC operation

Adapter 640 or 707 North Ameri
Adapter 708 England
Adapter 709 West Germany

APPENDIX

Trouble Shooting

If battery is low calculator will:

a. Display will appear erratic
b. Display will dim
c. Display will fail to accept numbers

If one or all of the above conditions occur, you may check for a low battery condition by entering a series of 8's. If 8's fail to appear, operations should not be continued on battery power. Unit may be operated on AC power.

CAUTION
A strong static discharge will damage your machine.

Shipping Instructions:

A defective machine should be packaged securely and returned to the authorized service center nearest you. See listing of service centers.

Temperature Range

Mode	Temperature °C	Temperature °F
Operating	0° to 50°	32° to 122°
Storage	−40° to 55°	−40° to 131°

Guarantee

Your new electronic calculator is guaranteed for both parts and labour for 1 year from date of purchase.

If your calculator proves defective for any reason during this period, Commodore will exchange it for a brand new one.

Please pack your calculator well and send it prepaid to Commodore Service Centre, as listed. Please make sure to ship this with all postage, shipping and insurance charges paid.

Please enclose a copy of your original sales slip or similar proof of purchase when sending in your defective machine.

This guarantee applies only to the original owner. While normally it does not cover damage or malfunctions resulting from fire, accident, neglect, abuse or other causes beyond our control, Commodore will assume responsibility for replacement if your calculator is not damaged beyond identification.

Specifically excepted from this guarantee are any disposable batteries that may have come with the calculator, either supplied by Commodore or by the retailer. In order to record your guarantee, please complete the registration card and mail within 10 days from date of purchase.