HP 6S Scientific Calculator

**HEWLETT®
PACKARD**

1

NOTICE

This manual and any examples contained herein are provided as is and are subject to change without notice. Except to the extent prohibited by law, Hewlett-Packard Company makes no express or implied warranty of any kind with regard to this manual and specifically disclaims the implied warranties and conditions of merchantability and fitness for a particular purpose and Hewlett-Packard Company shall not be liable for any errors or for incidental or consequential damage in connection with the furnishing, performance or use of this manual and the examples herein.

REGULATORY INFORMATION

USA

This calculator has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This calculator generates, uses and can radiate radio frequency energy and may interfere with radio and television reception. In the unlikely event that this equipment does cause interference to radio or television reception, try the following:

- reorient or relocate the receiving antenna
- increase separation between the calculator and the receiver
- consult your dealer or an experienced radio/TV technician for help.

CANADA

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003.

Contents

3

1. Keyboard

General keys

Key	Functions	Page
[0] to [9] : [•]	Data entry	8
[+] [−] [X] [÷] [=]	Basic calculation	8
[AC]	Reset the calculator and clear the memory	9
[C/CE]	Clear/clear error	9
[+/−]	Change sign	8

Memory keys

Key	Functions	Page
[RM]	Retrieve data from the independent memory	11
[X→M]	Store display data in memory	11
[X↔M]	Exchange of display data and contents of memory	11
[M+]	Add displayed data to memory	11

Special keys

Key	Functions	Page
[INV]	Inverse	7
[MODE]	Mode	7
[(] [)]	Brackets (parentheses)	10
[Exp]	Exponent	8
[π]	Pi	13

Key	Functions	Page
[→DEG] [→DMS]	Sexagesimal/decimal notation conversion	13
[DRG]	Mode of angle DEG→RAD→GRAD→DEG	13
[DRG▸]	Angular conversion of data DEG→RAD→GRAD→DEG	13
[X↔Y]	Register exchange	11
[←]	Clearing the last entered digit	9
[FIX]	Fix the number of digits after the decimal point	9
[FLO]	Floating notation	9
[SCI]	Scientific notation	9
[ENG]	Engineering notation	15

Base-n keys

Key	Functions	Page
[DEC]	Decimal	16
[BIN]	Binary	16
[HEX]	Hexadecimal	16
[OCT]	Octal	16
[A] to [F]	Hexadecimal numbers only	16–18
[AND]	And	17
[OR]	Or	17
[XOR]	Exclusive Or	17
[XNOR]	Exclusive Nor	17
[NOT]	Not	17
[NEG]	Negative	18

Function keys

Key	Functions	Page
sin	Sine	13
cos	Cosine	13
tan	Tangent	13
sin⁻¹	Arc sine	13
cos⁻¹	Arc cosine	13
tan⁻¹	Arc tangent	13
HYP	Hyperbolic	14
log	Common logarithm	14
10^x	Common antilogarithm	14
ln	Natural logarithm	14
e^x	Natural antilogarithm	14
$\sqrt{\ }$	Square root	14
x^2	Square	14
A$\frac{b}{c}$ D/C	Fraction	12
$\sqrt[3]{\ }$	Cube root	14
$\frac{1}{x}$	Reciprocal	12
$n!$	Factorial	14

Key	Functions	Page
y^x	Power	8
$\sqrt[x]{y}$	Root	14
R→P	Rectangle to polar	15
P→R	Polar to rectangular	15
%	Percent	12

Statistical keys

Key	Functions	Page
SD	Statistical data mode	19
DATA	Data entry	19
DEL	Data delete	19
σn	Sample standard deviation	19
$\sigma n\text{-}1$	Population standard deviation	19
$\bar{x}$	Arithmetic mean	19
n	Number of data	19
Σx	Sum of value	19
Σx^2	Sum of square value	19

6   **Keyboard**

2. The display

```
M
E  1  .  2  3  4  5
INV  HYP  BIN  OCT  HEX
```
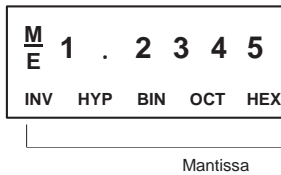
Mantissa

LCD Diagram

The display shows input data, interim results and answers to calculations. The mantissa section displays up to 10 digits. The exponent section displays up to ±99.

Display	Meaning	Page
-E-	Indicates an error	9
INV	[INV] has been pressed to enable inverse key functions	9
M	Indicates that data is stored in the memory	11
HYP	[HYP] has been pressed for hyperbolic functions	14
BIN, OCT, HEX	BASE-N mode has been selected	16
SD	Statistical mode has been selected	19
DEG, RAD, GRAD	[DRG] has been pressed to switch between the DEG, RAD and GRAD angle types	13
FIX (this does not display)	The number of decimal places of a displayed value has been set	9,15
SCI (this does not display)	Converts a displayed value to exponent display	9
ENG (this does not display)	Converts a displayed value to exponent display of which the exponent is a multiple of 3 and mantissa is between 0 to 999	15
FLO (this does not display)	Convert a SCI or ENG form display to a normal display value	15
45⌐12⌐123	$45^{12}/_{123}$	11
12.°3'45.6"	Sexagesimal figure 12°3'45.6"	13

Exponent displays

The display can show calculation results only up to 10 digits long. When an intermediate value or a final result is longer than 10 digits, the calculator automatically switches over to exponential notation. Values greater than 9,999,999,999 are always displayed exponentially.

The Display   **7**

3. Basic functions

Entering numbers

1 2 3 etc •	Press the number keys to enter numbers. Press • for a decimal point.

Entering negative numbers

+/−	Press after a number to make it negative.

5 • 0 8 +/−	-5.08

Entering exponential numbers

Exp	Press to enter an exponential number.

3.08×10^9	3 • 0 8 Exp 9	3.08^{09}

Arithmetic operator

+ − × ÷ y^x	Press to perform an arithmetic operation on the value displayed. You must enter a number after the arithmetic operator. If you press more than one arithmetic operator in sequence, the calculator only performs the last operation (the last key pressed).

4 × ÷ + − + 5	9.

Equals

=	Press to complete your calculation and display a result. If you press = more than once without entering a number, the calculator performs the last arithmetic operation on the value displayed.

4×8	4 × 8 =	32.
	4 × 8 = =	256.

8   **Basic functions**

Making corrections

←	Press to delete the last number entered.
C/CE	Press to remove the displayed value, but retain the calculation being performed.
	Press after the arithmetic operator to cancel the entire calculation.

5 + 5 + 5 + 6 C/CE 5 =	20.
5 + 5 + 5 + C/CE =	0.

Clearing errors

C/CE	Press to clear an error (indicated by "-E-" in the display)—eg, an overflow error—and retain data in the memory.
AC	Press to reset the calculator and clear the memory (solar model only).

Fixing the number of decimal places displayed

INV FIX 2	Press after your arithmetic operation, or after you press AC, to set the number of decimal places displayed (the number you press is the number of decimal places you want to display). The calculator rounds the number in the display but maintains full precision internally.
INV FIX •	Press to reset the floating decimal point.

Setting the display to scientific notation

INV SCI	Press to set the display to scientific notation and express the number as a power of 10—eg, .0043 is displayed as $4.3.^{-03}$ to represent 4.3×10^{-3}.
INV FLO	Press to reset the display to the floating format.

4. Calculations

Precision

The HP 6S scientific calculator calculates answers to 12-digit accuracy, but rounds answers to 10 digits in the display. When it performs a calculation using the result of a previous calculation, it uses the stored 12-digit value and not the 10-digit value displayed.

Order of operations

The HP 6S scientific calculator performs operations in the following order:

x^2, $\sqrt[x]{y}$, R→P, P→R
×, ÷
+, −
AND
OR, XOR, XNOR

Simple calculations

Perform calculations in the same way that you write them on paper.

7.2×8.5 − 4.7×3.9

7·2×8·5−4·7×3·9= | 42.87

4×8   4×8= | 32.

Specifying the order of calculations

( )

Use brackets to specify the order of calculations. You can nest as many as six levels of brackets.
You do not need to enter the closing brackets. The calculator inserts them for you, although it does not display them.

-5(4+3)   5+/-×(4+3= | -35.

Re-using arithmetic operations

$+$ $+$
or
$\times$ $\times$
etc

Press the arithmetic operator key twice to re-use an arithmetic operation on a new number. The calculator stores the operation and applies it when you enter another number and press $=$.
Store a calculation for re-use by enclosing it in brackets.
Clear the stored arithmetic operation by pressing C/CE.

3+2.3	3 + + 2 · 3 =	5.3
6+2.3	6 =	8.3
9+2.3	9 =	11.3
4(3×6)	4 × × (3 × 6 =	72.
-5(3×6)	5 +/- =	-90.

Using memory

X→M
M+
RM
X↔M
C/CE
AC
OFF
ON

The HP 6S scientific calculator has one independent memory.
M is displayed when there is a value in memory.
Press C/CE to clear the display or cancel the current calculation without clearing the memory.
Press X→M to store the displayed value in memory.
Press M+ to add the displayed value to the memory.
Press RM to retrieve the contents of memory—to determine its value or include it in your calculation.
Press INV X↔M to display the contents of memory and replace it with the value that was displayed before the keys were pressed.
Press AC to clear the display and the memory (solar model).
Press OFF ON to clear the display and the memory (battery model).

Fraction arithmetic

Ab/c

Press to enter fractions.
Press Ab/c after $=$ to display the fraction as a decimal.
In the display, a fraction is reduced to its lowest terms when you press a function command key (×,÷,+,-) or =.

$4\,^5/_6 \times (3+1^2/_3) \div 7^8/_9$

| 4 Ab/c 5 Ab/c 6 × (3 + 1 Ab/c 2 Ab/c 3) ÷ 7 Ab/c 8 Ab/c 9 = | 2⌐61⌐71. |
| Ab/c | 2.86 |

$(1.5 \times 10^7) - [(2.5 \times 10^6) \times {}^3/_{100}] =$

$\boxed{1}\boxed{\cdot}\boxed{5}\boxed{Exp}\boxed{7}\boxed{-}\boxed{2}\boxed{\cdot}\boxed{5}\boxed{Exp}\boxed{6}\boxed{X}\boxed{3}\boxed{A\%}\boxed{1}\boxed{0}\boxed{0}\boxed{=}$	149250000.

$3^{456}/_{78} = 8^{11}/_{13}$

$\boxed{3}\boxed{A\%}\boxed{4}\boxed{5}\boxed{6}\boxed{A\%}\boxed{7}\boxed{8}$	3⌐456⌐78.
$\boxed{=}$	8⌐11⌐13.

$\boxed{INV}\boxed{D/C}$	Press these keys to switch between proper and improper fractions.

$8^{11}/_{13} = {}^{115}/_{13}$

	8⌐11⌐13.
$\boxed{INV}\boxed{D/C}$	115⌐13.
$\boxed{INV}\boxed{D/C}$	8⌐11⌐13.

The answer to a calculation involving both fractions and decimals is displayed as a decimal.

${}^{41}/_{52} \times 78.9$

$\boxed{4}\boxed{1}\boxed{A\%}\boxed{5}\boxed{2}\boxed{X}\boxed{7}\boxed{8}\boxed{\cdot}\boxed{9}\boxed{=}$	62.20961538

Percentage calculations

$\boxed{INV}\boxed{\%}$	Press to perform percentage calculations.

12% of 1500	$\boxed{1}\boxed{5}\boxed{0}\boxed{0}\boxed{X}\boxed{1}\boxed{2}\boxed{INV}\boxed{\%}\boxed{=}$	180.
660 as a percentage of 880	$\boxed{6}\boxed{6}\boxed{0}\boxed{\div}\boxed{8}\boxed{8}\boxed{0}\boxed{INV}\boxed{\%}\boxed{=}$	75.
2500 plus 15%	$\boxed{2}\boxed{5}\boxed{0}\boxed{0}\boxed{+}\boxed{1}\boxed{5}\boxed{INV}\boxed{\%}$	375.
	$\boxed{=}$	2875.
25% discount on 3500	$\boxed{3}\boxed{5}\boxed{0}\boxed{0}\boxed{-}\boxed{2}\boxed{5}\boxed{INV}\boxed{\%}$	875.
	$\boxed{=}$	2625.

26% of 2200; 26% of 3300; 26% of 3800;

$\boxed{2}\boxed{2}\boxed{0}\boxed{0}\boxed{X}\boxed{X}\boxed{2}\boxed{6}\boxed{INV}\boxed{\%}\boxed{=}$	572.
$\boxed{3}\boxed{3}\boxed{0}\boxed{0}\boxed{=}$	858.
$\boxed{3}\boxed{8}\boxed{0}\boxed{0}\boxed{=}$	988.

$80 last week; $100 this week: what % is the new value of the old value?

$\boxed{1}\boxed{0}\boxed{0}\boxed{\div}\boxed{8}\boxed{0}\boxed{INV}\boxed{\%}\boxed{=}$	125.

What % is 138gm to 150gm and 129gm to 150gm?

$\boxed{1}\boxed{3}\boxed{8}\boxed{\div}\boxed{\div}\boxed{1}\boxed{5}\boxed{0}\boxed{INV}\boxed{\%}\boxed{=}$	92.
$\boxed{1}\boxed{2}\boxed{9}\boxed{=}$	86.

5. Other functions

Converting minutes and seconds to decimal format

→DEG	Press to convert minutes and seconds (sexagesimal figure) to decimal format. When you enter the sexagesimal figure, enter the degrees to the left of the decimal point, and minutes and seconds to the right—the first and second digits to the left of decimal point are minutes and the third and subsequent digits seconds.
INV →DMS	Press to convert decimal format to sexagesimal format.

14°25′36″   1 4 · 2 5 3 6 →DEG   14.42666667

INV →DMS   14°25′36″

Conversion between angles, radians and grads

INV DRG▸   45° = 0.785398163 rad = 50 grad   4 5 INV DRG▸   RAD   0.785398163

INV DRG▸   GRAD   50.

INV DRG▸   DEG   45.

Trigonometric functions

Press DRG to switch between RAD, DEG and GRAD

sin (π/6 rad) =   RAD INV π ÷ 6 = sin   RAD   0.5

cos 63°52′41″ =   DEG 6 3 · 5 2 4 1 →DEG   DEG 63.87805556

COS   DEG 0.440283084

tan (-35 grad) =   GRAD 3 5 +/− tan   GRAD -0.612800788

2 • sin 45° x cos 65° = DEG 2 X 4 5 sin X 6 5 cos =   DEG   0.597672477

cot 30° = ^{1}/tan 30° =   DEG 3 0 tan 1/x   DEG 1.732050808

sec (π/3 rad) = cos $\frac{1}{(π/3 \text{ rad})}$ RAD INV π ÷ 3 = cos 1/x   RAD   2.

cosec 30° = $\frac{1}{\sin 30°}$ 3 0 sin 1/x   DEG   2.

cos $\frac{-\sqrt{2}}{2}$ RAD 2 INV √ +/− ÷ 2 = cos   RAD 0.760244597

tan $^{-1}$0.6104 =   DEG · 6 1 0 4 INV tan⁻¹   DEG 31.39989118

INV →DMS   DEG   31°23′59.6″

Hyperbolic functions

sinh 3.6 =	$\boxed{3}\boxed{\cdot}\boxed{6}\boxed{\text{HYP}}\boxed{\text{sin}}$	18.28545536
tanh 2.5 =	$\boxed{2}\boxed{\cdot}\boxed{5}\boxed{\text{HYP}}\boxed{\text{tan}}$	0.986614298
cosh 1.5 – sinh 1.5 =	$\boxed{1}\boxed{\cdot}\boxed{5}\boxed{\text{X→M}}\boxed{\text{HYP}}\boxed{\text{cos}}\boxed{-}$	ᴹ 2.352409615
	$\boxed{\text{RM}}\boxed{\text{HYP}}\boxed{\text{sin}}\boxed{=}$	ᴹ 0.22313016
$\sinh^{-1} 30 =$	$\boxed{3}\boxed{0}\boxed{\text{INV}}\boxed{\text{HYP}}\boxed{\text{sin}^{-1}}$	4.094622224
solve tanh 4x = 0.88		
$x = \dfrac{\tan^{-1} 0.88}{4} =$	$\boxed{\cdot}\boxed{8}\boxed{8}\boxed{\text{INV}}\boxed{\text{HYP}}\boxed{\text{tan}^{-1}}\boxed{\div}\boxed{4}\boxed{=}$	0.343941914

Logarithmic functions

log 1.23 (=log₁₀ 1.23) =	$\boxed{1}\boxed{\cdot}\boxed{2}\boxed{3}\boxed{\text{log}}$	0.089905111
solve $4^x = 64$ $x = \dfrac{\log 64}{\log 4}$	$\boxed{6}\boxed{4}\boxed{\text{log}}\boxed{\div}\boxed{4}\boxed{\text{log}}\boxed{=}$	3.
log 456 ÷ ln 456 =	$\boxed{4}\boxed{5}\boxed{6}\boxed{\text{X→M}}\boxed{\text{log}}\boxed{\div}\boxed{\text{RM}}\boxed{\text{ln}}\boxed{=}$	ᴹ 0.434294481
$10^{0.4} + 5 \bullet e^{.3} =$	$\boxed{\cdot}\boxed{4}\boxed{\text{INV}}\boxed{10^x}\boxed{+}\boxed{5}\boxed{\times}\boxed{3}\boxed{+/-}\boxed{\text{INV}}\boxed{e^x}\boxed{=}$	2.760821773
$5.6^{2.3} =$	$\boxed{5}\boxed{\cdot}\boxed{6}\boxed{y^x}\boxed{2}\boxed{\cdot}\boxed{3}\boxed{=}$	52.58143837
$123^{1/7} (=\sqrt[7]{123}) =$	$\boxed{1}\boxed{2}\boxed{3}\boxed{\text{INV}}\boxed{\sqrt[x]{y}}\boxed{7}\boxed{=}$	1.988647795
$(78 - 23)^{-12} =$	$\boxed{(}\boxed{7}\boxed{8}\boxed{-}\boxed{2}\boxed{3}\boxed{)}\boxed{y^x}\boxed{1}\boxed{2}\boxed{+/-}\boxed{=}$	1.305111829⁻²¹
$3^{12} + e^{10} =$	$\boxed{3}\boxed{y^x}\boxed{1}\boxed{2}\boxed{+}\boxed{1}\boxed{0}\boxed{\text{INV}}\boxed{e^x}\boxed{=}$	553467.4658

Powers and roots

$\sqrt{2} + \sqrt{3} \times \sqrt{5} =$	$\boxed{2}\boxed{\text{INV}}\boxed{\sqrt{}}\boxed{+}\boxed{3}\boxed{\text{INV}}\boxed{\sqrt{}}\boxed{\times}\boxed{5}\boxed{\text{INV}}\boxed{\sqrt{}}\boxed{=}$	5.287196909
$\sqrt[3]{5} + \sqrt[3]{-27} =$	$\boxed{5}\boxed{\text{INV}}\boxed{\sqrt[3]{}}\boxed{+}\boxed{2}\boxed{7}\boxed{+/-}\boxed{\text{INV}}\boxed{\sqrt[3]{}}$	-1.290024053
$123 + 30^2 =$	$\boxed{1}\boxed{2}\boxed{3}\boxed{+}\boxed{3}\boxed{0}\boxed{x^2}\boxed{=}$	1023.
8! (=1 x 2 x 3 x … x 7 x 8) =	$\boxed{8}\boxed{\text{INV}}\boxed{n!}$	40320

14   Other functions

Miscellaneous functions

|		
1.234 + 1.234 =	INV FIX 2 1 • 2 3 4 +	1.23
	1 • 2 3 4 =	2.47
	INV FIX •	2.468
1 ÷ 3 + 1 ÷ 3 =	INV FIX 2 1 ÷ 3 +	0.33
	INV SCI	3.33-01
	1 ÷ 3 =	6.67-01
	INV FLO	0.67
	INV FIX •	0.666666666
123m x 456m = 56088m	1 2 3 x 4 5 6 =	56088.
= 56.088km	INV ENG	56.088 03
7.8g ÷ 96 = 0.08125g	7 • 8 ÷ 9 6 =	0.08125
= 81.25mg	INV ENG	81.25 - 03

Polar to rectangular coordinates conversions

Formula: $x = r \cdot \cos\theta$ $y = r \cdot \sin\theta$
eg, find the value of x and y when the point P is shown
as θ=60 and the length r=2 in the polar coordinates
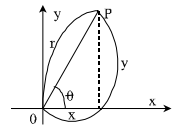
DEG 2 INV X÷Y 6 0 INV P→R	1.
	(x)
INV X÷Y	1.732050808
	(y)
INV X÷Y	1.
	(x)

Rectangular to polar coordinates conversions

Formula: $r = \sqrt{x^2 + y^2}$
$\theta = \tan^{-1} y/x$ (-180°<θ ≥ 180°)
eg, find the length r and the angle θ in radian when the point
P is shown as x=1 and y=√3 in the rectangular coordinates.
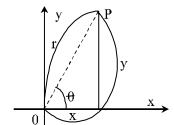
RAD 1 INV X÷Y 3 INV √ R→P =	2.
	(r)
INV X÷Y	1.047197551
	(θ in radian)
INV X÷Y	2.
	(r)

Other functions   15

6. Binary, octal and hexadecimal values

MODE

HEX OCT
BIN DEC

Use the MODE key to set the number base. When you use bases other than 10, you can only enter numbers valid for the base—eg, in binary mode you can only enter 1 and 0.

MODE HEX sets the mode to hexadecimal. In hexadecimal mode, A to F keys are enabled. Note that b and d in hexadecimal mode are shown in lower case to distinguish them from numbers.

MODE OCT sets the mode to octal.

MODE BIN sets the mode to binary.

MODE DEC sets the mode to decimal.

Note: When using a number base other than 10, any fractional part is truncated.

Binary/octal/decimal/hexadecimal conversions

Conversion of 22_{10} to binary. 　　$2$$2$ MODE BIN | BIN　10110.

Conversion of 22_{10} to octal. 　　MODE OCT | OCT　26.

Conversion of 513_{10} to binary. 　　$5$$1$$3$ MODE BIN | E BIN　0.

　　Conversion to binary mode generates an error if the result is greater than 10 digits.

Conversion of $7FFFFFFF_{16}$ to decimal.

MODE HEX $7$$F$$F$$F$$F$$F$$F$ MODE DEC | 2147483647.

Conversion of 123456_{10} to octal.

$1$$2$$3$$4$$5$$6$ MODE OCT | OCT　361100.

Conversion of 1100110_2 to decimal.

MODE BIN $1$$1$$0$$0$$1$$1$$0$ MODE DEC | 102.

Binary/octal/decimal/hexadecimal calculations

MODE

HEX OCT

BIN DEC

$10111_2 + 11010_2 = 110001_2$

MODE BIN $1$$0$$1$$1$$1$$+$$1$$1$$0$$1$$0$$=$ | BIN　11000.

$123_8 \times ABC_{16}$
　$=37AF4_{16}$
　$=228084_{10}$

MODE OCT $1$$2$$3$$\times$ MODE HEX $A$$B$$C$$=$ | HEX　37AF4.

MODE DEC | 228084.

$1F2D_{16} - 100_{10}$
　$=7881_{10}$
　$=1EC9_{16}$

MODE HEX $1$$F$$2$$D$$-$ MODE DEC $1$$0$$0$ | 7881.

MODE HEX $=$ | HEX　1EC9.

$7654_8 \div 12_{10}$

$= 334.33\ldots._{10}$ $\boxed{\text{MODE}}\boxed{\text{OCT}}\boxed{7}\boxed{6}\boxed{5}\boxed{4}\boxed{\div}\boxed{\text{MODE}}\boxed{\text{DEC}}\boxed{1}\boxed{2}\boxed{=}$ | 334.3333333 |

$= 516_8$ $\boxed{\text{MODE}}\boxed{\text{OCT}}$ oct | 516. |

Fractional parts of calculation results are truncated.

$110_2 + 456_8 \times 78_{10} \div 1A_{16}$ $\boxed{\text{MODE}}\boxed{\text{BIN}}\boxed{1}\boxed{1}\boxed{0}\boxed{+}\boxed{\text{MODE}}\boxed{\text{OCT}}\boxed{4}\boxed{5}\boxed{6}\boxed{\times}$

$= 390_{16}$ $\boxed{\text{MODE}}\boxed{\text{DEC}}\boxed{7}\boxed{8}\boxed{\div}\boxed{\text{MODE}}\boxed{\text{HEX}}\boxed{1}\boxed{A}\boxed{=}$ HEX | 390. |

$= 912_{10}$ $\boxed{\text{MODE}}\boxed{\text{DEC}}$ | 912. |

Multiplication and division are given priority over addition and subtraction in mixed calculations.

$BC_{16} \times (14_{10} + 69_{10}$

$= 15604_{10}$

$= 3CF4_{16}$

$\boxed{\text{MODE}}\boxed{\text{HEX}}\boxed{B}\boxed{C}\boxed{\times}\boxed{(}\boxed{\text{MODE}}\boxed{\text{DEC}}\boxed{1}\boxed{4}\boxed{+}\boxed{6}\boxed{9}\boxed{)}\boxed{=}$ | 15604. |

$\boxed{\text{MODE}}\boxed{\text{HEX}}$ HEX | 3CF4. |

Logical operations

$\boxed{\text{AND}}\boxed{\text{OR}}$
$\boxed{\text{XOR}}\boxed{\text{XNOR}}$
$\boxed{\text{NOT}}$

You can use the following logical operations to compare two numbers. When performing logical operations, keep the following points in mind:

- You cannot use decimal-base numbers in logical operations.
- The calculator compares the binary versions of the numbers you enter. If the number is less than 10 digits long, the calculator fills values to the left of the number with 0s—eg, if you compare hexadecimal F1 to octal 4, the calculator compares 0000010001 to 0000000100.
- If you use one number with a logical operation, the calculator compares it to 0000000000.

The logical operators work in the following way:

1. The operation compares the binary digits in the corresponding positions in each of the numbers.
2. The operation returns a binary digit corresponding to each position.
3. If you are using a base other than binary, the result is shown in the base of the last number you entered.

The following logical operators are available:

$\boxed{\text{AND}}$ returns a 1 for every position where there is a 1 in both numbers.
$\boxed{\text{OR}}$ returns a 1 for every position where there is a 1 in either number.
$\boxed{\text{XOR}}$ returns a 1 for every position where there is a 1 in either number, but not both numbers.
$\boxed{\text{XNOR}}$ returns a 1 for every position where there is the same digit in both numbers.
$\boxed{\text{NOT}}$ returns the diminished radix complement.

Press these keys to perform the respective binary, octal, decimal and hexadecimal logical operations.

Binary, octal and hexadecimal values **17**

19_{16} AND $1A_{16} = 18_{16}$

MODE HEX 1 9 AND 1 A = | HEX   18.

120_{16} OR $1101_2 = 12D_{16}$

MODE HEX 1 2 0 OR MODE BIN 1 1 0 1 = | BIN   100101101.

MODE HEX | HEX   12d.

5_{16} XOR $3_{16} = 6_{16}$

MODE HEX 5 XNOR 3 = | HEX   6.

$2A_{16}$ XNOR $5D_{16} = FFFFFFFF88_{16}$

MODE HEX 2 A XNOR 5 D = | HEX FFFFFFFF88.

$1A_{16}$ AND $2F_{16} = A_{16}$

MODE HEX 1 A AND AND 2 F = | HEX   A.

NOT of 1010_2

MODE BIN 1 0 1 1 0 NOT | BIN   1111101001.

Radix complement

INV NEG | Press to calculate and display the radix complement of the hexadecimal, octal or binary number currently displayed—ie, 10000000000-the binary version of the number.

7. Using statistics

MODE SD	Press to use statistics mode. Statistics mode allows you to enter data and apply the statistics functions to analyse the data.

Entering a list of data items to analyse

DATA	Press after each data element. When you press DATA, the calculator displays the number of data elements entered.
	For example, to enter a list of data consisting of 5, 8 and -3, use the following keystrokes: 5 DATA 8 DATA 3 +/− DATA
	To enter the results of a calculation as a data item, perform the calculation as you would normally, then press DATA when the answer is displayed.
	You can amend the data entered into the calculator:
	To cancel the last entry you made, press C/CE before you press DATA. Note that when you press C/CE, **0** is displayed. Press INV n to display the number of data elements stored in the calculator. To delete a data item you entered previously, enter the value again, then press INV DEL.

Using statistical functions on your data

INV n	Once you enter a list of data values you can use the following statistical functions:	
σ_{n-1} σ_n	INV n	The number of data elements entered
$\bar{x}$ Σx	INV σ_{n-1}	Sample standard deviation
Σx^2	INV σ_n	Population standard deviation
	INV $\bar{x}$	Arithmetic mean
	INV Σx	The sum of each data element
	INV Σx^2	The sum of the data elements squared

DATA   Find the sample standard deviation of the data 5, 9 13 and 6.

MODE SD 5 DATA 9 DATA 1 3 DATA 6 DATA INV σ_{n-1} | SD   3.593976442 |

4, 1, 82, 59, 2, and 103 were entered, but 59 was entered by mistake. It should have been 58. To fix the mistake, enter the wrong number, 59, and INV DEL, then enter the right number, 58, and DATA.

8. Specifications

Scientific functions/input range

sinx / cosx / tanx	$\|x\| < 4.5 \times 10^{10}$ degrees $(< 25 \times 10^7 \pi\text{rad}, < 5 \times 10^{10}\text{grad}$
$\sin^{-1}x$ / $\cos^{-1}x$	$\|x\| \geq 1$
$\tan^{-1}x$	$\|x\| < 10^{100}$
sinhx / coshx	$\|x\| \geq 230.2585092$
tanhx	$\|x\| < 10^{100}$
$\sinh^{-1}x$	$\|x\| < 5 \times 10^{99}$
$\cosh^{-1}x$	$\|x\| \geq x < 5 \times 10^{99}$
$\tanh^{-1}x$	$\|x\| < 1$
logx / lnx	$10^{-99} \geq x < 10^{100}$
e^x	$-10^{100} < x \geq 230.2585092$
10^x	$-10^{100} < x < 100$
y^x	$y > 0 \rightarrow 10^{100} < x \bullet \log y < 100$ $\quad\quad y = 0 \rightarrow x > 0$ $y < 0 \rightarrow x$: integer or $^1/_{2n}$ +1 (n : integer)
$^x\sqrt{y}$	$y > 0 \rightarrow x \neq 0$: $-10^{100} < ^1/_x \bullet \log y < 230.2582092$ $y = 0 \rightarrow x > 0$ $y < 0 \rightarrow x$: odd number or $^1/_n$ (n : integer)
$\sqrt{x}$	$0 \geq x < 10^{100}$
x^2	$\|x\| < 10^{50}$
$^3\sqrt{x}$	$\|x\| < 10^{100}$
$^1/_x$	$\|x\| < 10^{100} (x \neq o)$
n!	$0 \geq x < 69$ (x : integer)
REC→POL	$\sqrt{x^2 + y^2} < 10^{100}$
POL→REC	$\|\theta\| < 4.5 \times 10^{10}$ degrees $(< 25 \times 10^7 \text{rad}, < 5 \times 10^{10}\text{grad})$ $0 \geq r \geq 10^{100}$
DMS→DEG	$\|x\| \geq 10^{100}$
DEG→DMS	$\|x\| \geq 10^7$
π	10 digits
Binary	Positive: $0 \geq x \geq 1111111111$ Negative: $1000000000 \geq x \geq 1111111111$
Octal	Positive: $0 \geq x \geq 3777777777$ Negative: $4000000000 \geq x \geq 7777777777$
Decimal	Positive: $0 \geq x \geq 9999999999$ Negative: $-9999999999 \geq x < 0$
Hexadecimal	Positive: $0 \geq x \geq 2540BE3FF$ Negative: $FDABF41C01 \geq x \geq FFFFFFFFFF$

Read-out

- Liquid crystal display suppressing unnecessary 0s (zeros).

Power source

- Silicon solar cell (solar model only)

- Alkaline manganese battery (LR43)—1 battery for the solar model; 2 batteries for the non-solar model.

Ambient Temperature range

- 0°C–40°C (32°F–104°F).

Dimensions

- 127mmH x 72mmW x 8.5mmD (not including the wallet).

Net weight

91g (including wallet).

9. Changing the battery

- **Replace the battery when:**

  Replace the battery (alkaline manganese battery (LR43)—1 in the solar model and 2 in the non-solar model) when the display darkens under poor light condition, or disappears, and cannot be restored by pressing AC .

- **To replace the battery:**
  1. Remove the four screws at the back of the calculator. **Don't loose the screws**.
  2. Remove the back panel.
  3. Remove the old battery. Lever it out with a sharp object like a pen.
  4. Install the new battery with the + sign at the uppermost.
  5. Replace the back panel and the screws.
  6. Check the display to make sure it is showing **0** in DEG mode.

Free Manuals Download Website

http://myh66.com

http://usermanuals.us

http://www.somanuals.com

http://www.4manuals.cc

http://www.manual-lib.com

http://www.404manual.com

http://www.luxmanual.com

http://aubethermostatmanual.com

Golf course search by state

http://golfingnear.com

Email search by domain

http://emailbydomain.com

Auto manuals search

http://auto.somanuals.com

TV manuals search

http://tv.somanuals.com