



Shown actual size.

HP-21

**University
Calculator
Center**

Service Mark
Application Calculators Incorporated

HP-21

Manufacturer: Hewlett-Packard

Display: 10 digit LED; 8 digit mantissa, 2 digit exponent when in scientific notation

Power Source: AC/DC rechargeable

AC Source: 100-127/200-254 V, 50-60 Hz

DC Operating Time: 3-5 hours

Recharge Time: 6 hours

Weight: 6 ounces

Size: 5.1 x 2.7 x 1.2 inches

Warranty: one year

Carrying Case: padded with belt loop

Logic: reverse Polish notation

Constant: yes

Underflow: scientific notation, range 10^{99} to 10^{-99}

Decimal: full floating; 0-9 with round off

Special Functions: see following

Blue Key ■:

The blue key allows most keys to perform 2 functions. If a key is pressed, the function on the key is performed; if blue is pressed first, the function in blue on the key is performed.

Display Modes $\overline{\text{DSP}}$:

When the calculator is turned on, it will display 0.00 — fixed notation, 2 decimal positions. The mode may be changed as follows — full internal accuracy is always maintained.

$\overline{\text{DSP}}$. 4 0.0000 fixed mode, 4 decimals

$\overline{\text{DSP}}$ 4 0.0000 00 scientific notation, 4 decimals

Examples:

Equation:

$$((2 + 3) \times 6 - 4) \div 2 = 13$$

2 $\overline{\text{ENTER}}$ 3 $\overline{+}$ 6 $\overline{\times}$ 4 $\overline{-}$ 2 $\overline{\div}$ 13

Stack Operations $\overline{\text{ENTER}}$ $\overline{\text{R}}$ $\overline{\text{R}}$ $\overline{\text{R}}$:

Positions	1	2	3	4	5	6	7	8	9	0
T	0	0	0	0	0	1	1	1	3	
Z	0	0	0	1	1	2	2	2	1	
Y	0	1	1	2	2	3	3	4	2	
X	1	1	2	2	3	3	4	3	4	

Scientific Notation and Change Sign $\overline{\text{EEX}}$ $\overline{\text{CHS}}$:

$$(-2 \times 10^{25}) \times (4 \times 10^{-10}) = -8 \times 10^{15}$$

2 $\overline{\text{CHS}}$ $\overline{\text{EEX}}$ 25 $\overline{\text{ENTER}}$ 4 $\overline{\text{EEX}}$ 10 $\overline{\text{CHS}}$ $\overline{\times}$ -8. 15

Trigonometric Functions $\overline{\text{SIN}}$ $\overline{\text{COS}}$ $\overline{\text{TAN}}$:

$$\sin 45^\circ = .71$$

$$45 \overline{\text{SIN}} .71$$

$$\arcsin .3 = 17.46^\circ$$

$$.3 \overline{\text{SIN}} 17.46$$

Common and Natural Logs $\overline{\text{e}^x}$ $\overline{\text{STO}}$ $\overline{\text{RCL}}$:

50 $\overline{\text{e}^x}$ 3.91 $\overline{\text{e}^x}$ 50 natural log and antilog

50 $\overline{\text{STO}}$ 1.70 $\overline{\text{RCL}}$ 50 common log and antilog

Polar/Rectangular Coordinates $\overline{\text{R}}$ $\overline{\text{R}}$:

3 $\overline{\text{ENTER}}$ 4 $\overline{\text{R}}$ 5 (magnitude) $\overline{\text{R}}$ 36.87 (angle)

36.87 $\overline{\text{ENTER}}$ 5 $\overline{\text{R}}$ 4 (x) $\overline{\text{R}}$ 3 (y)

Memory Operations $\overline{\text{STO}}$ $\overline{\text{RCL}}$ $\overline{-}$ $\overline{+}$ $\overline{\times}$ $\overline{\div}$:

$\overline{\text{STO}}$ Stores displayed number

$\overline{\text{RCL}}$ Recalls stored number

$\overline{-}$ Subtracts displayed number from memory

$\overline{+}$ Adds displayed number to memory

$\overline{\times}$ Multiplies memory by displayed number

$\overline{\div}$ Divides memory by displayed number

Constant Arithmetic:

To enter a constant, load the constant into all four stack registers by pressing the enter key three times. To compound one thousand by six percent use the following sequence.

1.06 $\overline{\text{ENTER}}$ $\overline{\text{ENTER}}$ $\overline{\text{ENTER}}$
 1000 $\overline{\times}$ 1060.00 $\overline{\times}$ 1123.60 $\overline{\times}$ 1191.02
 $\overline{\times}$ 1262.48 $\overline{\times}$ 1338.23

Angular Mode:

Problems may be worked in either degrees or radians by setting the switch on the top left of the calculator to the appropriate mode.

Other Functions:

$$\overline{1/x} \quad 8 \overline{1/x} .125$$

$$1/8 = .125$$

$$\overline{1/x} \quad 2 \overline{\text{ENTER}}$$

$$2^3 = 8$$

$$\overline{\text{CHS}} \quad 4 \overline{\text{CHS}} 2$$

$$\sqrt{4} = 2$$

$$\overline{\text{EXX}} \quad \overline{\text{EXX}} 3.14$$

$$\pi = 3.14$$

Hewlett-Packard Company

Hewlett-Packard (HP) is the world's largest manufacturer of electronic measuring instruments. Its sales for 1974 were in excess of \$880 million. Sales of computers and calculators represented approximately 25% of total sales.

Hewlett-Packard is a large stable company that should continue to be an industry leader in highly sophisticated portable calculators.