
The TI-55-II Quick Reference Guide

**A handy pocket-guide to
the most used operations
of your TI-55-II calculator**

- Algebraic operations
- Powers and roots
- Constants
- Trigonometry
- Statistical operations
- Conversions
- Programming
- Integration
- And more



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TI-55-II QUICK REFERENCE GUIDE

Always refer to the *Calculator Decision-Making Sourcebook*, 2nd Edition, for complete details and examples of calculator operation.

TI-55-II Keys and Functions

Arithmetic	$\boxed{+}$, $\boxed{-}$, $\boxed{\times}$, $\boxed{\div}$, $\boxed{=}$
Data Entry	$\boxed{0}$ - $\boxed{9}$, $\boxed{\cdot}$, $\boxed{+/-}$, $\boxed{x\div y}$, $\boxed{\pi}$
Display	$\boxed{2nd}$ \boxed{Fix} , \boxed{EE} , $\boxed{2nd}$ \boxed{Eng}
Clearing	$\boxed{ON/C}$, $\boxed{ON/C}$ $\boxed{ON/C}$, $\boxed{2nd}$ \boxed{CM} , $\boxed{2nd}$ \boxed{CP} , $\boxed{2nd}$ \boxed{CSR}
Algebraic	$\boxed{2nd}$ $\boxed{x^2}$, $\boxed{\sqrt{x}}$, $\boxed{2nd}$ $\boxed{1/x}$, $\boxed{y^x}$, \boxed{INV} $\boxed{y^x}$, $\boxed{2nd}$ $\boxed{x!}$, $\boxed{2nd}$ \boxed{nPr} , $\boxed{2nd}$ \boxed{nCr} , $\boxed{2nd}$ \boxed{Sgn} , $\boxed{2nd}$ $\boxed{ x }$, $\boxed{2nd}$ \boxed{Intg} , $\boxed{2nd}$ \boxed{Frac} , $\boxed{2nd}$ $\boxed{\Delta\%}$
Data Grouping	AOST™ Algebraic Operating System, $\boxed{(.)}$, $\boxed{.)}$, up to 15 open parentheses and 4 operations pending
Memory	8 memories accessed with \boxed{STO} , \boxed{RCL} , \boxed{EXC} , direct memory arithmetic with $\boxed{+}$, $\boxed{-}$, $\boxed{\times}$, $\boxed{\div}$, $\boxed{y^x}$, \boxed{INV} $\boxed{y^x}$, $\boxed{2nd}$ $\boxed{\Delta\%}$
Percent	$\boxed{2nd}$ $\boxed{\%}$ alone or with $\boxed{+}$, $\boxed{-}$, $\boxed{\times}$, $\boxed{\div}$
Trigonometric	$\boxed{\sin}$, $\boxed{\cos}$, $\boxed{\tan}$, \boxed{INV} $\boxed{\sin}$, \boxed{INV} $\boxed{\cos}$, \boxed{INV} $\boxed{\tan}$ in degrees, radians, or grads

Hyperbolic

hyp sin, **hyp cos**, **hyp tan**, **INV**
hyp sin, **INV hyp cos**, **INV hyp**
tan

Conversion

2nd F-C, **2nd gal-l**, **2nd in-cm**, **2nd**
lb-kg, **2nd P-R**, **2nd DMS-00**, **DRG**, **2nd**
DRG+

Logarithms

log, **lnx**, **INV log**, **INV lnx**

Constant

2nd K operates with **+**, **-**,
X, **÷**, **y^x**, **INV y^x**, **2nd Δ%**

Statistical

Σ+, **2nd Σ-**, **2nd Frq**, **2nd σ_n**,
2nd σ_{n-1}, **2nd σ_n x:y**, **2nd σ_{n-1}**
x:y, **2nd Mean**, **2nd Mean x:y**, **2nd**
Corr, **2nd b/a**, **2nd b/a x:y**, **2nd**
x', **2nd y'**

Programming

LRN, **2nd Part**, **SST**, **BST**, **RST**,
R/S, **2nd Pause**, **2nd Ins**, **2nd Del**

Integration

fdx

APD™

Automatic Power Down

AOST™ Algebraic Operating System

AOST™ algebraic operating system allows entering numbers and combined operations in the same order in which they are written mathematically. Operations are performed in the following descending order of priority:

1. The following are performed immediately: trigonometric, hyperbolic, square, square root, factorial, exponential, reciprocal, conversion, combinations, permutations, percent, and logarithmic keys
2. The percent change key
3. The universal powers and roots keys
4. Multiplication and division keys
5. Addition and subtraction keys
6. The equals key $\boxed{=}$ completes all pending operations

The calculator allows up to four pending operations and 15 open parentheses.

Clearing

The following are the effects of the clearing keys.

$\boxed{ON/C}$ following a digit — clears the display.

$\boxed{ON/C}$ following an operation — clears the display and pending operations.

$\boxed{ON/C}$ $\boxed{ON/C}$ — clears the display and pending operations.

$\boxed{2nd}$ \boxed{CM} — clears the user data memories.

$\boxed{2nd}$ \boxed{CP} — clears the program registers.

$\boxed{2nd}$ \boxed{CSR} — clears the statistical registers and removes STAT from the display.

Display Formats

The internal display register holds calculated results to 11 digits. The value displayed is rounded to eight digits.

EE — Scientific notation allows you to use numbers as small as $\pm 1 \times 10^{-99}$ and as large as $\pm 9.9999999 \times 10^{99}$. Numbers smaller than $\pm 1 \times 10^{-7}$ and larger than $\pm 9.9999999 \times 10^7$ must be entered into the calculator in scientific notation. If calculations exceed these limits, the results are automatically displayed in scientific notation. Leave scientific notation with the **INV** **EE** key.

2nd Eng — Numbers expressed in engineering notation are displayed as a mantissa times 10 raised to a power that is a multiple of three. Leave engineering notation with the **INV** **2nd Eng** key.

2nd Fix n — Pressing the fix decimal key directs the calculator to round the display to n decimal places. The internal display register still retains the full 11 digit accuracy for use in subsequent calculations. Reset to floating decimal mode with the **INV** **2nd Fix**, **2nd Fix** 8, or **2nd Fix** 9 keys.

Memory Operations

The calculator may have a maximum of eight user data memories, numbered 0 through 7. The number of user data memories is set with the **2nd** **Part** **n** key with *n* the number of user data memories desired. The following keys and operations allow manipulation of the numbers in the user data memories.

2nd **CM** — clears the user data memories.

STO *m* — stores the value shown in the display in user data memory *m*.

RCL *m* — recalls to the display the number in user data memory *m*.

EXC *m* — exchanges the value in the display with the value in user data memory *m*.

The results of calculations may be stored in a user data memory by following a calculation with **STO**, the operation to be performed, and the number of the user data memory in which to store the result. The displayed number and calculations in progress are not affected. The following keys may be used in conjunction with **STO**: **+**, **-**, **X**, **÷**, **y^x**, **INV** **y^x**, and **2nd** **Δ%**.

Powers and Roots

y^x — The universal power key raises any positive number to any power. To use this key:

- Enter the number to be raised to a power ("y")
- Press **y^x**
- Enter the power ("x")
- Press **=**

INV y^x — The universal root key takes any root of any positive number. To use this key:

- Enter the number to take the root of ("y")
- Press **INV y^x**
- Enter the root to be taken ("x")
- Press **=**

Constant Operations

The **2nd K** key stores a number and an operation for use in repetitive calculations. Here is how it works.

- Enter the operation
- Enter the repetitive number *m*
- Press **2nd K**
- Press **=**

From then on

- Enter the number to be operated on
- Press **=**

The **2nd K** feature works with the following keys:

+, **-**, **X**, **÷**, **y^x** , **INV y^x** , and **2nd $\Delta\%$** .

Pressing **ON/C** after **=**, **OFF**, any of the above operation keys, or the close parenthesis key removes the automatic constant.

Algebraic Keys

The following keys perform the indicated operations on the number in the display:

- 2nd** **|x|** — Absolute value
- 2nd** **Sgn** — Signum
- 2nd** **Intg** — Integer portion
- 2nd** **Frac** — Fractional portion
- \sqrt{x}** — Square root
- 2nd** **x^2** — Square
- 2nd** **$1/x$** — Reciprocal
- 2nd** **%** — Percent

Trigonometric Operations

DRG — Pressing the angular mode key changes from degree mode to radian mode to grad mode and back to degree mode. You may also go through the modes in reverse order by pressing the **INV** **DRG** key.

2nd **DRG-** — The angular mode conversion key changes the mode displayed and converts the number in the display to the new units. You may also go through the modes and values in reverse order by pressing the **INV** **2nd** **DRG-** key.

sin, **cos**, **tan**, **INV** **sin**, **INV** **cos**, **INV** **tan** — The trigonometric keys calculate the sine, cosine, tangent, arcsine, arccosine, and arctangent of the number in the display.

hyp — Preceding one of the trigonometric keys with the hyperbolic key calculates the hyperbolic function of the number in the display. The keys **INV** and **hyp** may be used together with either one first.

Factorial, Permutations, and Combinations

The $\boxed{2nd}$ $\boxed{x!}$ key calculates and displays the factorial of any integer less than 70. The $\boxed{2nd}$ \boxed{nPr} key determines the permutations of n items taken r at a time. The $\boxed{2nd}$ \boxed{nCr} key determines the combinations of n items taken r at a time. To determine permutations and combinations, the values of n and r are entered as $n.rrr$. For example, to find the combinations of 5 things taken 2 at a time, enter 5.002 and press the $\boxed{2nd}$ \boxed{nCr} key.

Statistical Keys

When the $\boxed{\Sigma+}$ or $\boxed{2nd}$ \boxed{Frq} key is pressed, the statistics mode is entered, memories 3 through 7 are cleared, any program is cleared, and STAT is displayed.

The $\boxed{2nd}$ \boxed{CSR} key returns the calculator to normal calculation mode. The STAT indicator is removed and the calculator is set with eight user data memories with memories 3 through 7 cleared.

The procedures to enter and remove statistical data are shown in the following charts.

SINGLE-VARIABLE DATA ENTRY

1. To Enter Single Occurrence Data Points

- Enter data point
- Press $\Sigma+$
- Repeat for next data point

2. To Remove Single Occurrence Data Points Entered

- Press ON/C $x:y$
- Enter unwanted data point
- Press $2nd$ $\Sigma-$

3. To Enter Multiple Occurrence Data Points

- Enter data point
- Press $2nd$ Frq
- Enter number of repetitions
- Press $\Sigma+$
- Repeat for next data points

4. To Remove Multiple Occurrence Data Points Entered

- Press ON/C $x:y$
- Enter unwanted data point
- Press $2nd$ Frq
- Enter number of repetitions
- Press $2nd$ $\Sigma-$

TWO-VARIABLE DATA ENTRY

1. To Enter Single Occurrence Data Points

- Enter "x" data point
- Press $x:y$
- Enter "y" data point
- Press $\Sigma+$
- Repeat for next data point

2. To Remove Single Occurrence Data Points Entered

- Enter unwanted "x" data point
- Press $x:y$
- Enter unwanted "y" data point
- Press 2^{nd} $\Sigma-$

3. To Enter Multiple Occurrence Data Points

- Enter "x" data point
- Press $x:y$
- Enter "y" data point
- Press 2^{nd} Frq
- Enter number of repetitions
- Press $\Sigma+$
- Repeat for next data points

4. To Remove Multiple Occurrence Data Points Entered

- Enter unwanted "x" data point
- Press $x:y$
- Enter unwanted "y" data point
- Press 2^{nd} Frq
- Enter number of repetitions
- Press 2^{nd} $\Sigma-$

The procedures to obtain statistical data are shown in the following charts.

SINGLE-VARIABLE DATA RESULTS

1. Mean

- Press **2nd** **Mean**

2. Population Standard Deviation

- Press **2nd** **σ_n**

3. Sample Standard Deviation

- Press **2nd** **σ_{n-1}**

TWO-VARIABLE DATA RESULTS

1. Mean

- "y" data points: Press $\boxed{2nd}$ \boxed{Mean}
- "x" data points: Press $\boxed{2nd}$ \boxed{Mean} $\boxed{x:y}$

2. Population Standard Deviation

- "y" data points: Press $\boxed{2nd}$ $\boxed{\sigma n}$
- "x" data points: Press $\boxed{2nd}$ $\boxed{\sigma n}$ $\boxed{x:y}$

3. Sample Standard Deviation

- "y" data points: Press $\boxed{2nd}$ $\boxed{\sigma n-1}$
- "x" data points: Press $\boxed{2nd}$ $\boxed{\sigma n-1}$ $\boxed{x:y}$

4. Intercept and Slope

- Press $\boxed{2nd}$ $\boxed{b/a}$ to obtain the intercept
- Press $\boxed{2nd}$ $\boxed{b/a}$ $\boxed{x:y}$ to obtain the slope

5. One Value Given Another

- Enter the x value and press $\boxed{2nd}$ $\boxed{y'}$ to obtain a "y" value
- Enter the y value and press $\boxed{2nd}$ $\boxed{x'}$ to obtain an "x" value

6. Correlation

- Press $\boxed{2nd}$ \boxed{Corr}

Conversion Keys

These keys are used to convert from one system to another. To convert in the opposite direction, precede the key with **INV**.

2nd **F \leftrightarrow C** — Degrees Fahrenheit to degrees Celsius.

2nd **gal-l** — U.S. gallons to liters.

2nd **in-cm** — Inches to centimeters.

2nd **lb-kg** — Pounds to kilograms.

2nd **P \leftrightarrow R**, **INV** **2nd** **P \leftrightarrow R** — Polar/rectangular conversions are entered as follows:

Polar to Rectangular

Enter the R value

Press **x:y**

Enter the θ value

Select the proper

mode with **DRG**

Press **2nd** **P \leftrightarrow R**

The y-coordinate is displayed

Press **x:y**

The x-coordinate is displayed

Rectangular to Polar

Enter the x-coordinate

Press **x:y**

Enter the y-coordinate

Select the proper

mode with **DRG**

Press **INV** **2nd** **P \leftrightarrow R**

The θ value is displayed

Press **x:y**

The R value is displayed

2nd **DMS-00**, **INV** **2nd** **DMS-00** — Degrees/minutes/seconds, expressed as DD.MMSSss, are converted to decimal degrees, expressed as DD.ddd-ddd, with the **2nd** **DMS-00** key. Conversion from decimal degrees to degrees/minutes/seconds is with the **INV** **2nd** **DMS-00** key.

Programming Keys

2nd **Part** m — Before programming, space must be made available in the calculator's memory. The partition key sets the partition to m user data memo-

ries. The remaining space is used for program steps, with eight program steps available for each memory that is not used.

LRN — Pressing the learn key once puts the calculator in the learn mode if any programming steps are available. Pressing **LRN** again returns the calculator to the manual operation mode and restores the display to its original state.

R/S — The run/stop key reverses the status of processing. Pressing **R/S** starts program processing at the current position of the program counter. Pressing **R/S** while a program is running stops the program.

RST — The reset key resets the program counter to step 00, and, when used as a program step, also stops the program so that a value can be displayed. **RST** can be used from the keyboard or as a program instruction.

2nd Pause — The pause key, when encountered during program execution, causes the current value of the display register to be displayed for one to two seconds.

2nd CP — Pressing the clear program key while in the learn mode removes the program from program memory so that the calculator is ready for a new program.

SST, **BST** — The singlestep key moves forward one program step. The backstep key moves back one step. The **SST** key can also be used to execute a program, one step at a time, with the result of each step displayed.

2nd Ins, **2nd Del** — In the learn mode, the insert and delete keys allow changing a program by inserting new keystrokes or deleting old ones.

Key Codes

TI-55-II Keyboard Showing Key Code and Function Name

	17: \sqrt{x}	18: x^2		
**:	2nd	12: R/S	13: \sqrt{x}	*: OFF
*	Part	*: CP	*: Ins	*: Del
*	LRN	22: RST	*: SST	*: BST
	37: Fix	38: F-C	39: DMS-00	30: DRG-
31:	hyp	32: sin	33: cos	34: tan
	47: Eng	48: gal-l	49: lb-kg	40: in-cm
41:	INV	42: EE	43: log	44: ln x
*	Σ^-	57: P-R	58: %	59: $\Delta\%$
*	Σ^+	52: $x \div y$	53: (54:)
*	Mean	67: $x!$	68: nPr	69: nCr
61:	STO	07: 7	08: 8	09: 9
*	On-1	77: Sgn	78: Frac	79: K
71:	RCL	04: 4	05: 5	06: 6
*	On	87: $ x $	88: Intg	89: CM
81:	EXC	01: 1	02: 2	03: 3
*	Frq			
91:	π	00: 0	93: \cdot	94: +/-
				95: =
				*: ON/C
				20: Pause
				*: fdx
				*: Corr
				*: b/a
				*: x'
				*: y'
				*: CSR

*: No key code. These keys cannot be put in programs.

** : This key is merged with the following key stroke.

Key Codes in Numeric Order

00: 0	22: RST	45: y^x	69: 2nd nCr
01: 1	30: 2nd DRG+	47: 2nd Eng	71: RCL
02: 2	31: hyp	48: 2nd gal-l	75: -
03: 3	32: sin	49: 2nd lb-kg	77: 2nd Sgn
04: 4	33: cos	52: $x \div y$	78: 2nd Frac
05: 5	34: tan	53: (79: 2nd K
06: 6	35: DRG	54:)	81: EXC
07: 7	37: 2nd Fix	55: \div	85: +
08: 8	38: 2nd F-C	57: 2nd P \rightarrow R	87: 2nd x
09: 9	39: 2nd DMS-00	58: 2nd %	88: 2nd Intg
12: R/S	40: 2nd in-cm	59: 2nd $\Delta\%$	89: 2nd CM
13: \sqrt{x}	41: INV	61: STO	91: π
15: ON/C	42: EE	65: X	93: •
17: 2nd $1/x$	43: log	67: 2nd $x!$	94: +/-
18: 2nd x^2	44: ln x	68: 2nd nPr	95: =
20: 2nd Pause			

Integration

$\int dx$ — The integration key is used in combination with a program to find the definite integral of a function. Integrals are found in the following way:

- Select at least three user data memories using the **2nd** **Part** key
- Put the function to be integrated in program steps followed by **=** and **R/S**, **RST** or the partition
- Leave the learn mode, and enter the lower limit in user data memory 1 and the upper limit in user data memory 2
- Press **$\int dx$** , followed by the number of integration intervals you wish to make between the limits, up to 99
- Press **R/S**

At the end of the integration, the integral is displayed and placed in user data memory 0, and user data memories 1 and 2 both contain the upper limit.

When integrating trigonometric functions on your calculator you must use radians and be in the RAD mode to obtain the answer normally expected.

Battery Information

The calculator uses 2 of any of the following batteries for up to 750 hours of operation: Panasonic LR-44, Ray-O-Vac RW-82, Union Carbide (Eveready) A-76, or the equivalent. For up to 2000 hours of operation use Mallory 10L14, Union Carbide (Eveready) 357, Panasonic WL-14, Toshiba G-13, Ray-O-Vac RW-42, or the equivalent. Refer to the Appendix of the *Calculator Decision-Making Sourcebook*, 2nd Edition, for battery replacement instructions.

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