

# TI-30

## Student math kit



ment

MANUAL ON

BOOK



O MET

RYTHM "C

Cycle (23 days)  
Cognitive Cycle (28 days)  
Intellectual Cycle (33 days)

TEXAS INSTRUMENTS  
INCORPORATED



of days you are "into"  
above or

# An extraordinary value. Ideal for high school . . . and to grow with into college and career.

A unique problem-solving kit of math tools developed with the cooperation of nationally known educators.

This economical calculator-based math system is designed specifically to meet the needs of today's students. As skills grow through high school, to college, and into a career, the TI-30 will continue to meet all but the more advanced math challenges.

Basic to the Student Math Kit is, of course, the powerful 48-function TI-30 slide rule calculator. Plus the key to mastering its full potential easily and quickly: "The Great International Math On Keys Book". It's 224 pages of valuable operating tips, math facts, useful formulas for school, home, science and business as well as puzzles and games that make math fun. Also included is a quick reference 48-page Owner's Manual describing the keys, key sequences and general usage. There's a handy product reference card for quick metric conversions. And, for fun, there's a pocket card to help you check your "good" and "bad" days according to the theory of "Biorhythm". A contemporary styled, simulated denim carrying case with a belt loop provides good protection and completes the kit.

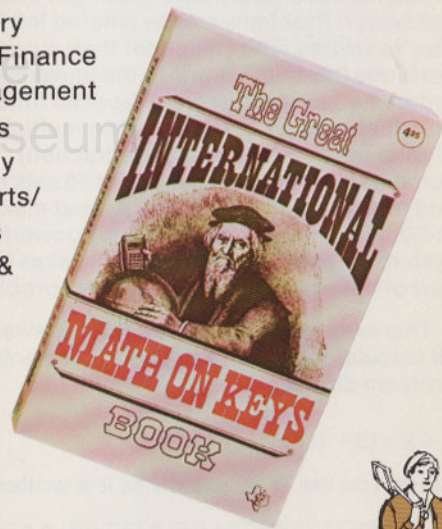


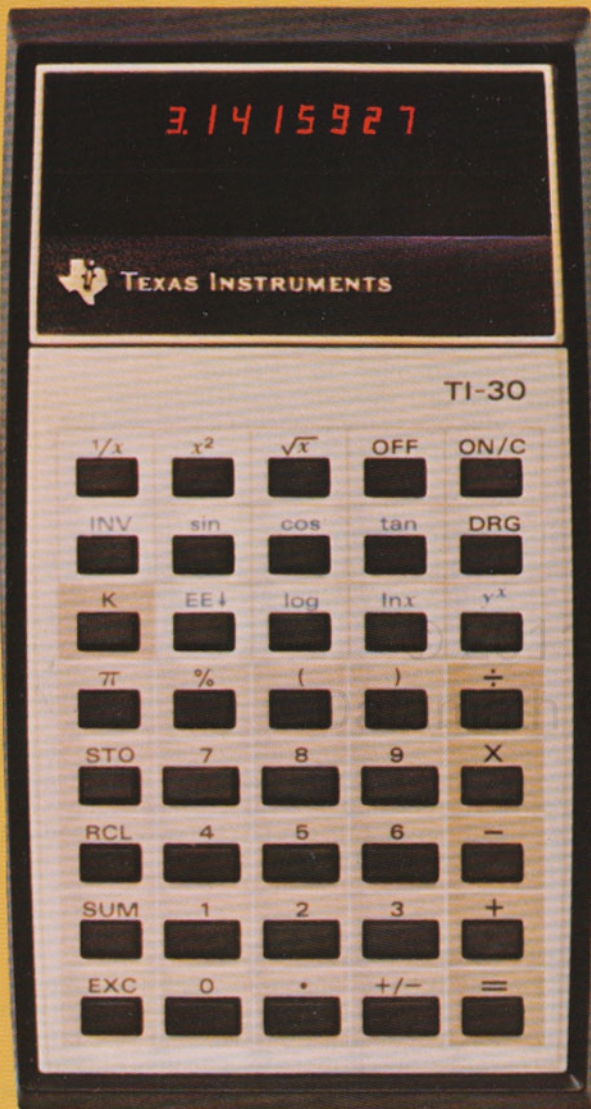
## Helps students get the most out of their TI-30.

Developed in cooperation with the staff of the University of Denver Mathematics Laboratory. Useful interesting information about calculator mathematics and the role it plays in everyday life. It helps students use the TI-30 slide rule calculator as part of a problem-solving system as well as a tool to discovery.

Chapters and topics include:

- Algebra
- Trigonometry
- Business & Finance
- Home Management
- Conversions
- Bibliography
- Tables/Charts/ Appendices
- Probability & Statistics
- Physics & Chemistry
- Puzzles & Games





Actual Size

*"The National Council of Teachers of Mathematics (NCTM) continues to endorse the minicalculator as a valuable instructional aid for mathematics education and to recommend the use of the minicalculator in the classroom."*

Source: NCTM News Release dated 11-75.

## A brief summary of the TI-30's features and capability.

### Basics

- +** Addition.
- Subtraction.
- X** Multiplication.
- ÷** Division.
- %** Percent.
- π** Enters pi correct to 11 digits (rounded to 8 for display only).
- 1/x** Reciprocal divides the display into 1.
- K** Constant stores a number and its associated operation for repetitive calculations.
- +/-** Change sign.

### Parentheses

- ( )** Isolates numerical expressions for correct mathematical interpretation. The TI-30 provides 15 sets of parentheses with up to four pending operations.

### Powers and Roots

- x<sup>2</sup>** Square.
- √x** Square root.
- y<sup>x</sup>** y to the x power.

### Logs

- lnx** Natural (base e).
- log** Common (base 10).

### Trig Functions

- DRG** Degree, Radian, Grad. Selects the unit for angular measurement. Can be changed whenever desired.
- sin** Sine of the displayed angle.
- cos** Cosine of the displayed angle.
- tan** Tangent of the displayed angle.

### Memory Functions

- STO** Stores data.
- RCL** Recalls data from memory.
- SUM** Adds data to memory.
- EXC** Exchanges the content of the memory with the display value.

## Exponent Entry and Exponent/Decimal Shift Key

**EE↓** Pressed after a keyboard entry, it prepares the calculator to accept the next digits entered as the exponent. Pressed after a result, it decreases the exponent by one and moves the decimal point of the mantissa one place to the right.

## Inverses

**INV** Works in a sequence with other keys to provide:  $x^{\text{th}}$  root of the value  $y$ . Arcsine. Arccosine. Arctangent. Common Antilogarithm ( $10^x$ ). Natural Antilogarithm ( $e^x$ ). Used with the exponential shift key, adds one to the exponent and moves the decimal one place to the left.

## Scientific Notation.

Numbers in the range  $10^{-99}$  to  $10^{+99}$  are handled with ease. Very large or very small numbers (larger than  $\pm 9.9999 \times 10^7$  or smaller than  $\pm 1 \times 10^{-8}$ ) are entered in scientific notation. The number is entered as a mantissa multiplied by 10 raised to some power (exponent) such as  $3.6089 \times 10^{32}$ . Data in scientific notation form may be entered intermixed with data in standard form. An "exponent shift" key enables the exponent to be shifted one step at a time to a required value (i.e.  $10^6$  for mega-units or  $10^{-3}$  for milli-units). Also, calculated results in the range  $\pm 1 \times 10^{-8}$  to  $\pm 1 \times 10^8$  can be changed into and out of scientific notation as desired.

## Accuracy and Rounding.

While the display has a capacity of only 8 digits, the internal calculating capacity is 11 digits. The result within the calculator is automatically rounded to 8 digits for display purposes only (5 digits for scientific notation). The 5/4 rounding system adds one to the least significant displayed digit if the next non-displayed number is five or more (i.e. round up). When the digit is less than five, the calculator rounds down. As the calculator is capable of working internally with 11 digits, numbers with 9 to 11 digits may be entered by summing two numbers ( $389182 + .70636 = 389182.71$ ). The calculator simply completes the operation and uses the 11 digit result for further calculations.

## Automatic Turn-off.

The display automatically turns off after a brief period of time if no new keyboard entries are made (typically 25 to 50 seconds). A traveling decimal remains in the display to indicate the calculator still contains the current status of calculations. As soon as any key is pressed, the full display is restored. When left unattended, the traveling decimal continues for a period of typically 7 to 14 minutes and then the calculator turns off completely, just as if you had pressed the **OFF** key. This feature substantially increases battery life if you forget to turn your calculator off or if it is turned on accidentally.

## TI's unique Algebraic Operating System (AOS) helps make the TI-30 easy to use.

Mathematics educators use a set of universally accepted rules when teaching and solving mathematics problems. AOS puts these rules right into your calculator. Problems can be entered left to right just as they're written. The calculator then automatically performs the calculations in the universally accepted order of algebraic hierarchy (special functions solved first, then powers and roots, then multiplication and division, then addition and subtraction). This capability, combined with the availability of 15 sets of parentheses and four pending operations is what makes up AOS in the TI-30. This provides an incredibly powerful, easy-to-use system for problem solving. And makes the calculator part of the solution – not part of the problem.

This example has only *one* right answer. But not all calculators will give it to you if you enter the problem directly.

$$1 + 2 \times (3 - 1/7)^{2.5} = ?$$

Solve it on the TI-30 exactly as it is written:

$$1 \boxed{+} 2 \boxed{\times} \boxed{(} 3 \boxed{-} 1 \boxed{\div} 7 \boxed{)} \boxed{y^x} 2.5 \boxed{=} 28.596874$$

# Specifications

**Readout:** Bright 8-digit, light-emitting diode display. Decimal point, negative sign, angular mode indicator, error indication "Error".

**Electronics:** Texas Instruments manufactured MOS/LSI integrated circuit . . . containing exclusive electronic on/off circuit.

**Power source:** One 9-volt non-rechargeable alkaline battery (Not included with calculator).

**Included:** Owner's Manual. The Great International Math On Keys Book. Carrying Case.

**Optional accessories:** Rechargeable kit (RK-1) to convert calculator from disposable battery power source to a rechargeable source. Kit includes an electronic rechargeable battery and an AC adapter/charger.

**Size:** 5.8 x 3.2 x 1.38 inches.

**Weight:** Approximately 120 grams (4.2 ounces) without battery.

## Limited Warranty

The TI-30 is covered by a one-year limited warranty against defects in materials and workmanship.

Due to the difficulty in photographing calculator readouts, displays represented here are simulated.

Texas Instruments reserves the right to make changes in materials and specifications without notice.

**TEXAS INSTRUMENTS**  
INCORPORATED