

# HP 10bII+ Financial Calculator

## Quick Start Guide



HP Part Number: NW239-90201

Edition 1, April 2010

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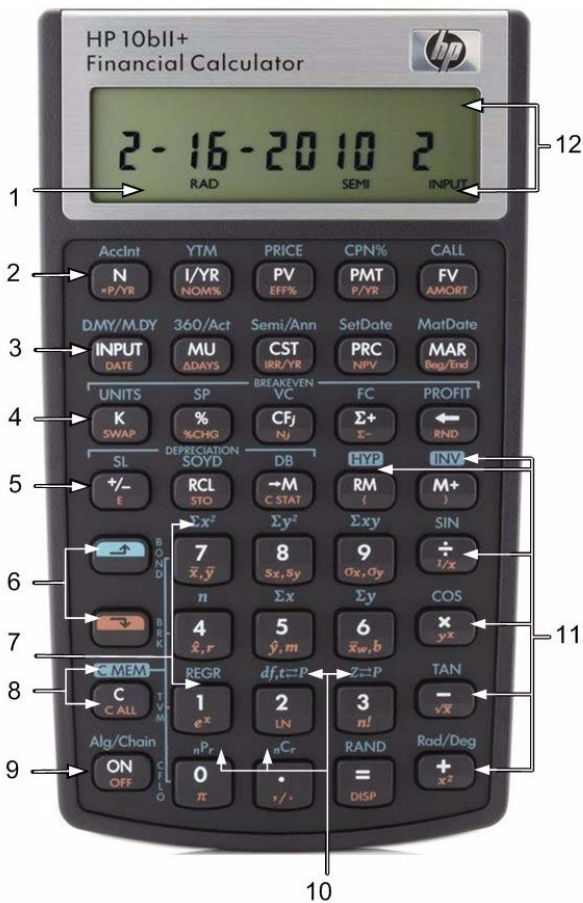
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## Keyboard Legend



<b>Number</b>	<b>Primary Functions (white)</b>	<b>SHIFT Down</b>  <b>(orange functions on key bevel)</b>	<b>SHIFT Up</b>  <b>(blue functions above keys)</b>
1	12 digit, 7-segment LCD display		
2	Time Value of Money (TVM)	Amortization, payments per year/Interest conversion	Bonds
3	Input key/margin, cost, price and markup	Date and number of days, IRR per year, NPV, beginning/end of payment period	Calendar and coupon payment schedules, settlement and maturity dates (bonds)
4	Memory register, percent, cash flow entry, statistics entry, backspace	Swap, percent change, cash flow count, delete statistics, round	Break-even
5	Change sign, recall and memory	Scientific notation, exponent, store, clear statistics, parentheses	Depreciation, hyperbolic and inverse functions
6	SHIFT Up (blue) SHIFT Down (orange)		
7	Numbered keys: 1, and 4-9	Statistical functions and estimation	Statistical functions and regression modes
8	Clear	Clear all	Clear selected memory
9	On	Off	Operating mode
10	Numbered keys: 0 and 2-3, decimal	Common mathematical functions	Z and T probability and combination/permutation functions
11	Mathematical functions	Common mathematical functions, parentheses	Trigonometric functions
12	Annunciators		

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





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# Getting Started

This guide is intended to get you started with your new 10bII+ financial calculator. It includes basic information about the many features available on the 10II+ along with example problems. If you require more information about the concepts presented here, refer to the *HP 10bII+ Financial Calculator User's Guide* on the CD included in the package along with your calculator. For more information about HP calculators, please refer to the training materials available at: [www.hp.com/calculators](http://www.hp.com/calculators).

## Power On and Off

To turn on your HP 10bII+, press . To turn the calculator off, press the orange shift key, , then . To change the brightness of the display, hold down  and then simultaneously press  or .

Since the calculator has continuous memory, turning it off does not affect the information you have stored. To conserve energy, the calculator turns itself off after five minutes of inactivity. The calculator uses two CR2032 coin batteries. If you see the low-battery symbol (  ) in the display, replace the batteries. See the section below titled, *Replacing the Batteries* for more information.

## Basics of Key Functions

Table 1-1 Basics of key functions





























Keys	Display	Description
	0.00	Turns calculator on.
 [blue]	0.00	Displays shift annunciator  .

Table 1-1 Basics of key functions

Keys	Display	Description
 [orange]	0.00	Displays shift annunciator  .
   	12_	Erases last character.
	0.00	Clears display.
 	<b>STAT CLR</b> (message flashes, then disappears)	Clears statistics memory.
 	<b>12 P_Yr</b> (message flashes, then disappears)	Clears all memory.
  	<b>BOND CLR</b> (message flashes, then disappears)	Clears bond memory.
  	<b>BR EV CLR</b> (message flashes, then disappears)	Clears break-even memory.
  	<b>TVM CLR</b> (message flashes, then disappears)	Clears tvm memory.
  	<b>CFLO CLR</b> (message flashes, then disappears)	Clears cash flow memory.
 		Turns calculator off.

## Shift Keys

Most keys on the HP 10bII+ have three functions:

- a primary function printed in white on the key.
- a secondary function printed in orange on the bevel of the key.
- a tertiary function printed in blue above the key on the keyboard (see Figure 1).



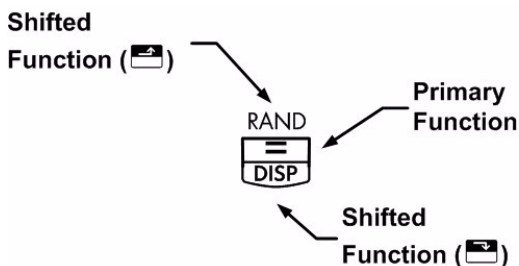




Figure 1





When you press or , a shift annunciator or is displayed to indicate that the shifted functions are active. For example, press followed by to multiply a number in the display by itself. To turn the shift annunciators off, simply press or again.

In this guide, key symbols are used to indicate the key presses used in the example problems. These symbols vary in appearance according to whether they indicate the primary, secondary, or tertiary functions required for the problem. For example, the functions associated with the equals key, , are illustrated in the text as follows:

- primary function (equals):
- secondary function (display):
- tertiary function (random):

## Boxed Key Functions

There are three shifted key functions on the calculator that are used to change the operation of another key's function. These three tertiary functions,  ,

  and  , are bound by blue boxes to show that they operate differently. These special functions require subsequent key presses to operate.

















For example, the functions associated with the clear key, , include:


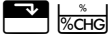




Table 1-2 Clearing functions

Keys	Associated Function
	Clear display.
 	Clear all memory.
  	Clears bond memory.
  	Clears break-even memory.
  	Clears TVM memory.
  	Clears cash flow memory.

For more information on the calculator's keys and basic functions, refer to chapter 2, *Getting Started* in the *HP 10bII+ Financial Calculator User's Guide*.


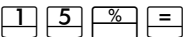
## Percentages

Table 1-3 Keys for percentage calculations

Keys	Description
	Percent
	Percent change
	Cost
	Price
	Margin
	Markup








Add 15% to \$17.50.

Table 1-4 Calculating the price

Keys	Display	Description
	17.50	Enters number.
	20.13	Adds 15%.








Find the margin if the cost is \$15.00 and selling price is \$22.00.

Table 1-5 Finding the margin

Keys	Display	Description
  	15.00	Enters cost.
  	22.00	Enters price.
	31.82	Calculates margin.

If the cost is \$20.00 and the markup is 33%, what is the selling price?



























Table 1-6 Calculating the price

Keys	Display	Description
  	20.00	Enters cost.
  	33.00	Enters markup.
	26.60	Calculates price.

For more information on percentages, refer to chapter 3, *Business Percentages* in the *HP 10bII+ Financial Calculator User's Guide*.

## Memory Keys

Table 1-7 Memory keys

Keys	Description
	Stores a constant operation.
	Stores a value in the M register (memory location).
	Recalls a value from the M register.
	Adds a value to the number stored in the M register.
 	When followed by a number key,  to  , or  and  to  , stores a number in the display into a numbered data storage register. There are 20 storage registers, designated 0-19. Press    followed by  through  to access registers 10-19.
	When followed by a number key,  to  , or  and  to  , recalls a number from a storage register. Press   followed by  through  to access registers 10-19.

Multiply 17, 22, and 25 by 7, storing 'x 7' as a constant operation.

Table 1-8 Storing 'x 7' as a constant

Keys	Display	Description
	7.00	Stores 'x 7' as a constant operation.
	119.00	Multiplies 17 x 7.
	154.00	Multiplies 22 x 7.
	175.00	Multiplies 25 x 7.






Store 519 in register 2, then recall it.

Table 1-9 Storing and recalling

Keys	Display	Description
	519.00	Stores 519 in register 2.
	0.00	Clears display.
	519.00	Recalls register 2.

Store 1.25 into register 15, then add 3, and store the result in register 15.

Table 1-10 Storage register arithmetic

Keys	Display	Description
	1.25	Inputs 1.25 into the display.
		Stores 1.25 in register 15.
	3.00	Adds 3 to 1.25 in register 15 stores the result in register 15.
	0.00	Clears the display.
	4.25	Recalls register 15.













For more information on number storage and storage register arithmetic, refer to chapter 4, *Number Storage and Storage Register Arithmetic* in the *HP 10bII+ Financial Calculator User's Guide*.

## Time Value of Money (TVM)

Enter any four of the five values and solve for the fifth.

A negative sign in the display represents money paid out, and money received is positive.

Table 1-11 Keys for TVM calculations

Keys	Description
  	Clears TVM memory and the current P_Yr is displayed.
	Number of payments.
	Interest per year.
	Present value.
	Payment.
	Future value.
 	Begin or End mode.
 	Number of payments per year mode.

If you borrow \$14,000 ( $PV$ ) for 360 months ( $N$ ) at 10% interest ( $I/YR$ ), what is the monthly repayment?


























Set to End mode. Press   if **BEGIN** annunciator is displayed.



Table 1-12 Calculating the monthly payment

Keys	Display	Description
  	<b>TVM CLR</b> (message flashes, then disappears)	Clears TVM memory and displays the current P_Yr.
   	12.00	Sets payments per year.
   	360.00	Enters number of payments.
  	10.00	Enters interest per year.
     	14,000.00	Enters present value.
 	0.00	Enters future value.
	-122.86	Calculates payment if paid at end of period.

### TVM What if...

It is not necessary to reenter TVM values for each example. Using the values you just entered, how much can you borrow if you want a payment of \$100.00?

Table 1-13 Calculating a new payment






















Keys	Display	Description
    	-100.00	Enters new payment amount. (Money paid out is negative).

Table 1-13 Calculating a new payment

Keys	Display	Description
	11,395.08	Calculates amount you can borrow.






...how much can you borrow at a 9.5% interest rate?

Table 1-14 Calculating a new interest rate

Keys	Display	Description
   	9.50	Enters new interest rate.
	11,892.67	Calculates new present value for \$100.00 payment and 9.5% interest.
  	10.00	Reenters original interest rate.
     	14,000.00	Reenters original present value.
	-122.86	Calculates original payment.









For more information on TVM concepts and problems, refer to chapter 5, *Picturing Financial Problems*, and chapter 6, *Time Value of Money Calculations* in the *HP 10bII+ Financial Calculator User's Guide*.

## Amortization

After calculating a payment using Time Value of Money (TVM), input the periods to amortize and press  . Press   once for periods 1–12, and once again for payments 13–24, and so on. Press  to continually cycle through the principal, interest, and balance values (indicated by the **PRIN**, **INT**, and **BAL** annunciators respectively). Using the previous TVM example, amortize a single payment and then a range of payments.















Amortize the 20<sup>th</sup> payment of the loan.

Table 1-15 Amortizing the 20th payment of the loan

Keys	Display	Description
  	20.00	Enters period to amortize.
 	20 – 20	Displays period to amortize.
	-7.25	Displays principal.
	-115.61	Displays interest. (Money paid out is negative).
	13,865.83	Displays the balance amount.

Amortize the 1<sup>st</sup> through 24<sup>th</sup> loan payments.














Table 1-16 Amortization example

Keys	Display	Description
   	12_	Enters range of periods to amortize.
 	1 – 12	Displays range of periods (payments).
	-77.82	Displays principal.
	-1,396.50	Displays interest. (Money paid out is negative).
	13,922.18	Displays the balance amount.
 	13 – 24	Displays range of periods
	-85.96	Displays principal.
	-1,388.36	Displays interest.
	13,836.22	Displays the balance amount.

For more information on amortization, refer to the section titled, *Amortization* in chapter 6, *Time Value of Money Calculations* in the *HP 10bII+ Financial Calculator User's Guide*.


























## Depreciation

Table 1-17 Depreciation keys

Keys	Description
  	Clears TVM memory and displays the current P_Yr. Since depreciation data is stored in the TVM memory, this clears for depreciation also.
	Expected useful life of the asset.
	Declining balance factor entered as a percentage.
	Depreciable cost of the asset at acquisition.
	Salvage value of the asset.
 	Straight-line depreciation.
 	Sum-of-the-years'-digits depreciation.
 	Declining Balance depreciation.

A metalworking machine, purchased for 10,000.00, is to be depreciated over five years. Its salvage value is estimated at 500.00. Using the straight-line method, find the depreciation and remaining depreciable value for each of the first two years of the machine's life.

Table 1-18 Calculating the depreciation







Keys	Display	Description
  	TVM CLR (message flashes, then disappears)	Clears TVM memory.
     	10,000.00	Inputs cost of the item.
   	500.00	Inputs the salvage value of the item.
 	5.00	Inputs the useful life of the asset.
  	1,900.00	Depreciation of the asset in year one.
 	7,600.00	Remaining depreciable value after year one.
  	1,900.00	Depreciation of the asset in year two.
 	5,700.00	Remaining depreciable value after year two.

For more information on depreciation, refer to chapter 7, *Depreciation* in the *HP 10bII+ Financial Calculator User's Guide*.

## Interest Rate Conversion











To convert between nominal and effective interest rates, enter the known rate and the number of periods per year, then solve for the unknown rate.

Table 1-19 Keys for interest rate conversion

Keys	Description
 	Nominal interest percent.
 	Effective interest percent.
 	Periods per year.

Find the annual effective interest rate of 10% nominal interest compounded monthly.

Table 1-20 Calculating the interest rate

Keys	Display	Description
   	10.00	Enters nominal rate.
   	12.00	Enters payments per year.
 	10.47	Calculates annual effective interest.

For more information on interest rate conversions, refer to the section titled, *Interest Rate Conversions* in chapter 6, *Time Value of Money Calculations* in the *HP 10bII+ Financial Calculator User's Guide*.

## Cash Flows, IRR/YR, NPV, and NFV

Table 1-21 Cash flows, IRR, NPV, and NFV keys


























Keys	Description
  	Clears cash flow memory.
 	Number of periods per year (default is 12). For annual cash flows, <b>P/YR</b> should be set to <b>1</b> ; for monthly cash flows, use the default setting, <b>12</b> .
	Cash flows, up to 45. “ <b>J</b> ” identifies the cash flow number. When preceded by a number, pressing  enters a cash flow amount.
<i>number1</i>  <i>number2</i> 	Enter a cash flow amount, followed by  . Enter a number for the cash flow count followed by  to enter cash flow amount and count simultaneously.
 	Opens editor for reviewing/editing entered cash flows. Press  or  to scroll through the cash flows.
 	Number of consecutive times cash flow “ <b>J</b> ” occurs.
 	Internal rate of return per year.
 	Net present value.



Table 1-21 Cash flows, IRR, NPV, and NFV keys

Keys	Description
   	Net future value.

If you have an initial cash outflow of \$40,000, followed by monthly cash inflows of \$4,700, \$7,000, \$7,000, and \$23,000, what is the IRR/YR? What is the IRR per month?

Table 1-22 Calculating the IRR/YR and IRR per month



















































Keys	Display	Description
  	<b>CFLO CLR</b> (message flashes, then disappears)	Clears cash flow memory.
   	12.00	Sets payments per year.
      	-40,000.00 ( <b>CF 0</b> flashes, then disappears)	Enters initial outflow.
    	4,700.00 ( <b>CF 1</b> flashes, then disappears)	Enters first cash flow.

Table 1-22 Calculating the IRR/YR and IRR per month

Keys	Display	Description
      	2.00 ( <b>CFn 2</b> flashes, then disappears)	Enters both the cash flow amount ( <b>7000.00</b> ) and count ( <b>2.00</b> ) simultaneously for second cash flow.
     	23,000.00 ( <b>CF 3</b> flashes, then disappears)	Enters third cash flow.
 	0 -40,000.00	Reviews entered cash flows starting with the initial cash flow. Press  to scroll through the cash flow list to verify the cash flow number, the amounts, and count for each entry. Press  to exit.
  	15.96	Calculates IRR/YR.
   	1.33	Calculates IRR per month.

What is the NPV and NFV if the discount rate is 10%?

Table 1-23 Calculating NPV and NFV

Keys	Display	Description
  	10.00	Enters I/YR.
 	622.85	Calculates NPV.
 	643.88	Calculates NFV.

For more information on cash flows, refer to chapter 8, *Cash Flow Calculations in the HP 10bII+ Financial Calculator User's Guide*.

## Date and Calendar

Table 1-24 Keys used for dates and calendar functions










Keys	Description
 	Enters dates in DD.MMYYYY or MM.DDYyyy formats. <b>M.DY</b> is the default. Numbers at the far right of a calculated date indicate days of the week. <b>1</b> is for Monday; <b>7</b> is for Sunday.
 	Toggles between 360-and 365-day (Actual) calendars.
 	Calculates the date and day, past or future, that is a given number of days from a given date. Based on your current setting, returned result is calculated using either 360-day or 365-day (Actual).














Table 1-24 Keys used for dates and calendar functions

Keys	Description
  	Calculates the number of days between two dates. Returned result is always calculated based on the 365-day calendar (Actual).

If the current date is February 28 2010, what is the date 52 days from now? Calculate the date using the 365-day calendar (actual) and the M.DY settings.

If **360** is displayed, press   . If **D.MY** is displayed, press   .

Table 1-25 Calculating the date

Keys	Display	Description
       	2.28	Inputs the date in the selected format.
 		
  	4-21-2010 3	Inputs the number of days and calculates the date along with the day of the week.

For more information on date and calendar functions, refer to chapter 9, *Calendar Formats and Date Calculations* in the *HP 10bII+ Financial Calculator User's Guide*.

## Bonds







Bond calculations, primarily calculating bond price and yield, are performed by two keys,   and  . These keys permit you to input data or return results. Pressing   only calculates a result. The other keys used in bond calculations only permit you to input the data required for the calculations.

Table 1-26 Bond calculation keys






























Keys	Description
  	Clears bond memory.
 	Calculates accrued interest.
 	Calculate or input yield% to maturity or yield% to call date for given price.
 	Calculate or input price per 100.00 face value for a given yield.
 	Input coupon rate stored as an annual %.
 	Input call value. Default is set for a call price per 100.00 face value. A bond at maturity has a call value of 100% of its face value.
 	Toggle date format between day-month-year (dd.mmyyyy) or month-day-year (mm.ddyyyy). Default is mm.ddyyyy.
 	Toggle day count calendar between Actual (365-day calendar) or 360 (30-day month/360-day year calendar).

Table 1-26 Bond calculation keys

Keys	Description
  	Toggle bond coupon (payment) between semiannual or annual payment schedules. Default is annual.
  	Input settlement date.
  	Input maturity date or call date. The call date must coincide with a coupon date.

What price should you pay on April 28, 2010 for a 6.75% U.S. Treasury bond maturing on June 4, 2020, if you want a yield of 4.75%? Assume the bond is calculated on a semiannual coupon payment on an actual/actual basis.

If **SEMI** is not displayed, press    
 to select the semiannual coupon payment.

If **D.MY** is displayed, press    
 to select M.DY format.

Table 1-27 Bond calculation
















Keys	Display	Description
   	<b>BOND CLR</b> (message flashes, then disappears)	Clears bond memory.
       	4-28-2010 3	Inputs the settlement date (mm.ddyyyy format).
  		














Table 1-27 Bond calculation

Keys	Display	Description
 	6-4-2020 4	Inputs the maturity date.
	6.75	Inputs <b>CPN%</b> .
	100.00	Inputs call value. Optional, as default is <b>100</b> .
	4.75	Inputs Yield%.
	115.89	Calculates the price.
	2.69	Displays the current value for accrued interest.
	118.59	Returns total price (value of price + value of accrued interest). The net price for the bond is <b>118.59</b> .

For more information on bond calculations, refer to chapter 10, *Bonds* in the *HP 10bII+ Financial Calculator User's Guide*.

## Break-even

Table 1-28 Break-even keys

Keys	Description
  	Clears break-even memory.
 	Stores the quantity of units required for a given profit or calculates it.
 	Stores the sales price per unit or calculates it.
 	Stores variable cost per unit for manufacturing or calculates it.
 	Stores the fixed cost to develop and market or calculates it.
 	Stores the expected profit or calculates it.

The sale price of an item is 300.00, the cost 250.00, and fixed cost 150,000.00. For a profit of 10,000.00, how many units would have to be sold?

Table 1-29 Calculating break-even



























Keys	Display	Description
  	<b>BR EV CLR</b> (message flashes, then disappears)	Clears break-even memory.
       	150,000.00	Inputs fixed cost.



Table 1-29 Calculating break-even

Keys	Display	Description
    $\frac{VC}{CF}$	250.00	Inputs variable cost per unit.
    $\frac{SP}{\%}$	300.00	Inputs price.
      $\frac{PROFIT}{\leftarrow}$	10,000.00	Inputs profit.
 $\frac{UNITS}{K}$	3,200.00	Calculates the current value for the unknown item, <b>UNITS</b> .

For more information on break-even calculations, refer to chapter 11, *Break-even* in the *HP 10bII+ Financial Calculator User's Guide*.

## Statistical Calculations

Table 1-30 Statistics keys








































Keys	Description
 $\frac{-M}{CSTAT}$	Clear statistical registers.
x-data 	Enter one-variable statistical data.
x-data  $\frac{\Sigma+}{\Sigma-}$	Delete one-variable statistical data.
x-data $\frac{INPUT}{\square}$ y-data $\frac{\Sigma+}{\square}$	Enter two-variable statistical data.
x-data $\frac{INPUT}{\square}$ y-data  $\frac{\Sigma+}{\Sigma-}$	Delete two-variable statistical data.

Table 1-30 Statistics keys

Keys	Description
 	Opens editor for reviewing/editing statistical data.
    	Means of $x$ and $y$ .
    	Mean of $x$ weighted by $y$ . Also calculates $b$ , coefficient.
    	Sample standard deviations of $x$ and $y$ .
    	Population standard deviations of $x$ and $y$ .
$y$ -data     	Estimate of $x$ and correlation coefficient.
$x$ -data     	Estimate of $y$ , slope and $m$ coefficient.
  	Permits selection of six regression models or a best fit. Default is linear.

Using the following data, find the means of  $x$  and  $y$ , the sample standard deviations of  $x$  and  $y$ , and the  $y$ -intercept and the slope of the linear regression forecast line. Then, use summation statistics to find  $\sum xy$ .

$x$ -data	2	4	6
$y$ -data	50	90	160

Table 1-31 Statistics example













































Keys	Display	Description
 	STAT CLR (message flashes, then disappears)	Clears statistics memory.
    	1.00	Enters first $x,y$ pair.
    	2.00	Enters second $x,y$ pair.
     	3.00	Enters third $x,y$ pair.
 	1 2.00	Reviews entered statistical data, starting with the initial $x$ value. Press  to scroll through and verify the entered statistical data. Press  to exit.
  	4.00	Displays mean of $x$ .
 	100.00	Displays mean of $y$ .
  	2.00	Displays sample standard deviation of $x$ .

Table 1-31 Statistics example

Keys	Display	Description
 	55.68	Displays sample standard deviation of <b>y</b> .
    	-10.00	Displays <b>y</b> -intercept of regression line.
    	-27.50	Displays slope of regression line.
 	1,420.00	Displays $\sum xy$ , sum of the products of <b>x</b> - and <b>y</b> -values.

For more information on statistical calculations, refer to chapter 12, *Statistical Calculations* in the *HP 10bII+ Financial Calculator User's Guide*.

## Probability

Table 1-32 Probability keys




























Keys	Description
 	Calculates a cumulative normal probability given a Z-value.
  	Calculates a Z-value given a cumulative normal probability.
 	Calculates the cumulative Student's T probability given degrees of freedom and a T-value.
  	Calculates a T-value given degrees of freedom and the cumulative Student's T probability.

Table 1-32 Probability keys

Keys	Description
	Calculates number of permutations of $n$ items taken $r$ at a time.
	Calculates number of combinations of $n$ items taken $r$ at a time.
	Calculates factorial of $n$ (where $-253 < n < 253$ ).

Enter .5 as a Z-value and calculate the cumulative probability of the Z-value and the Z-value from a given cumulative probability.






Table 1-33 Calculating the probability

Keys	Display	Description
 	0.00000	Sets number display to five digits to the right of the decimal.
   	.69146	Calculates the cumulative probability of the Z-value.
    	.94146	Adds .25.
  	1.56717	Calculates the Z-value from the cumulative probability.

For more information on probability, refer to the section titled, *Probability* in chapter 12, *Statistical Calculations* in the *HP 10bII+ Financial Calculator User's Guide*.


## Trigonometric Functions

Table 1-34 Trigonometry keys

Keys	Description
 $\frac{\text{SIN}}{\div}$ , $\frac{\text{COS}}{\times}$ , or $\frac{\text{TAN}}{-}$	Calculates sine, cosine, or tangent.
 $\frac{\text{INV}}{\text{M+}}$ $\frac{\text{SIN}}{\div}$ , $\frac{\text{COS}}{\times}$ , or $\frac{\text{TAN}}{-}$	Calculates inverse sine, cosine, or tangent.
 $\frac{\text{HYP}}{\text{RM}}$ $\frac{\text{SIN}}{\div}$ , $\frac{\text{COS}}{\times}$ , or $\frac{\text{TAN}}{-}$	Calculates hyperbolic sine, cosine or tangent.
 $\frac{\text{HYP}}{\text{RM}}$ $\frac{\text{INV}}{\text{M+}}$ $\frac{\text{SIN}}{\div}$ , $\frac{\text{COS}}{\times}$ , or $\frac{\text{TAN}}{-}$	Calculates inverse hyperbolic sine, cosine, or tangent.
 $\frac{\text{Rad/Deg}}{+}$	Toggles between radians and degrees modes. Default is degrees.


Find  $\text{Sin } \theta = .62$  in degrees. If **RAD** is displayed, press   $\frac{\text{Rad/Deg}}{+}$ .

Table 1-35 Trigonometry example

Keys	Display	Description
$\frac{\cdot}{\square}$ $\frac{6}{\square}$ $\frac{2}{\square}$	.62	Enters value of sine for $\theta$ .
 $\frac{\text{INV}}{\text{M+}}$ $\frac{\text{SIN}}{\div}$	38.32	Calculates $\theta$ .

Convert the results to radians using PI.

Table 1-36 Converting to radians


Keys	Display	Description
	.67	Converts degrees to radians.

For more information on trigonometric functions, refer to chapter 2, *Getting Started in the HP 10bII+ Financial Calculator User's Guide*.

## Replacing the Batteries

**Warning!** There is a danger of explosion if batteries are incorrectly replaced. Replace only with the same type of battery or with equivalent batteries (as recommended by the manufacturer). Dispose of used batteries according to the manufacturer's instructions.

- The calculator is powered by two 3-volt CR2032 coin batteries.
  - When changing batteries, use only fresh coin-cell batteries. Do not use rechargeable batteries.
  - Do not mutilate, puncture, or dispose of batteries in fire. The batteries can burst or explode, releasing hazardous chemicals.
  - Do not use new and old batteries together, and do not mix batteries of different types.
1. Have two fresh CR2032 batteries at hand. Only touch the batteries by their edges. Wipe each battery with a lint-free cloth to remove dirt and oil.
  2. Make sure the calculator is off. When changing the batteries, change the batteries one at a time to avoid clearing the memory. As a back-up, write down any data that you have stored and might need for later use.
  3. Turn the calculator over and pry off the battery cover.
  4. Gently remove one battery.

5. Insert the new battery, making sure that the positive sign (+) battery is facing outward.
6. Gently remove the other battery.
7. Insert the other new battery, making sure that the positive sign (+) battery is facing outward.
8. Replace the battery-compartment lid.
9. Press .
10. If the calculator does not turn on, follow the procedures in the section titled, *Determining if the Calculator Requires Service* in Appendix A of the *HP 10bII+ Financial Calculator User's Guide*.

## Customer Care

In addition to the one year hardware warranty, your HP calculator also comes with one year of technical support. If you need assistance with warranty, please refer to the warranty information on the product CD. HP customer care can be reached by either email or telephone. Before calling please locate the call center nearest you from the list provided. Have your proof of purchase and calculator serial number ready when you call. Telephone numbers are subject to change, and local and national telephone rates may apply. A complete list is available on the web at: [www.hp.com/support](http://www.hp.com/support).

**Table 1-37 Contact Information**

Country/Region	Contact	Country/Region	Contact
Algeria	<a href="http://www.hp.com/support">www.hp.com/support</a>	Anguila	1-800-711-2884
Antigua	1-800-711-2884	Argentina	0-800-555-5000
Aruba	800-8000; 800-711-2884	Austria Österreich	01 360 277 1203
Bahamas	1-800-711-2884	Barbados	1-800-711-2884
Belgique (Français)	02 620 00 85	Belgium (English)	02 620 00 86
Bermuda	1-800-711-2884	Bolivia	800-100-193
Botswana	<a href="http://www.hp.com/support">www.hp.com/support</a>	Brazil Brasil	0-800-709-7751
British Virgin Islands	1-800-711-2884	Bulgaria	<a href="http://www.hp.com/support">www.hp.com/support</a>
Canada	800-HP-INVENT	Cayman Island	1-800-711-2884



**Table 1-37 Contact Information**

Country/Region	Contact	Country/Region	Contact
Chile	800-360-999	China 中国	800-820-9669
Costa Rica	0-800-011-0524	Croatia	www.hp.com/support
Curacao	001-800-872-2881 + 800-711-2884	Czech Republic Česká republika	296 335 612
Denmark	82 33 28 44	Dominica	1-800-711-2884
Dominican Republic	1-800-711-2884	Egypt	www.hp.com/support
El Salvador	800-6160	Ecuador	1-999-119; 800-711-2884 (Andinatel) 1-800-225-528; 800-711-2884 (Pacifitel)
Estonia	www.hp.com/support	Finland Suomi	09 8171 0281
France	01 4993 9006	French Antilles	0-800-990-011; 800-711-2884
French Guiana	0-800-990-011; 800-711-2884	Germany Deutschland	069 9530 7103
Ghana	www.hp.com/support	Greece Ελλάδα	210 969 6421
Grenada	1-800-711-2884	Guadelupe	0-800-990-011; 800-711-2884
Guatemala	1-800-999-5105	Guyana	159; 800-711-2884
Haiti	183; 800-711-2884	Honduras	800-0-123; 800-711-2884
Hong Kong 香港特別行政區	800-933011	Hungary	<a href="http://www.hp.com/support">www.hp.com/support</a>
India	1-800-114772	Indonesia	(21)350-3408
Ireland	01 605 0356	Italy Italia	02 754 19 782
Jamaica	1-800-711-2884	Japan 日本	00531-86-0011
Kazakhstan	www.hp.com/support	Latvia	www.hp.com/support
Lebanon	www.hp.com/support	Lithuania	www.hp.com/support

**Table 1-37 Contact Information**

Country/Region	Contact	Country/Region	Contact
Luxembourg	2730 2146	Malaysia	1800-88-8588
Martinica	0-800-990-011; 877-219-8671	Mauritius	www.hp.com/support
Mexico México	01-800-474-68368 (800 HP INVENT)	Montenegro	www.hp.com/support
Montserrat	1-800-711-2884	Morocco	www.hp.com/support
Namibia	www.hp.com/support	Netherlands	020 654 5301
Netherland Antilles	001-800-872-2881; 800-711-2884	New Zealand	0800-551-664
Nicaragua	1-800-0164; 800-711-2884	Norway Norwegen	23500027
Panama Panamá	001-800-711-2884	Paraguay	(009) 800-541-0006
Peru Perú	0-800-10111	Philippines	(2)-867-3351
Poland Polska	www.hp.com/support	Portugal	021 318 0093
Puerto Rico	1-877 232 0589	Romania	www.hp.com/support
Russia Россия	495-228-3050	Saudi Arabia	www.hp.com/support
Serbia	www.hp.com/support	Singapore	6272-5300
Slovakia	www.hp.com/support	South Africa	0800980410
South Korea 한국	00798-862-0305	Spain España	913753382
St Kitts & Nevis	1-800-711-2884	St Lucia	1-800-478-4602
St Marteen	1-800-711-2884	St Vincent	01-800-711-2884
Suriname	156; 800-711-2884	Swaziland	www.hp.com/support
Sweden Sverige	08 5199 2065	Switzerland	022 827 8780
Switzerland (Suisse Français)	022 827 8780	Switzerland (Schweiz Deutsch)	01 439 5358

**Table 1-37 Contact Information**

Country/Region	Contact	Country/Region	Contact
Switzerland (Svizzera Italiano)	022 567 5308	Taiwan 臺灣	00801-86-1047
Thailand ไทย	(2)-353-9000	Trinidad & Tobago	1-800-711-2884
Tunisia	www.hp.com/support	Turkey Türkiye	www.hp.com/support
Turks & Caicos	01-800-711-2884	UAE	www.hp.com/support
United Kingdom	0207 458 0161	Uruguay	0004-054-177
US Virgin Islands	1-800-711-2884	United States	800-HP INVENT
Venezuela	0-800-474-68368 (0-800 HP INVENT)	Vietnam Việt Nam	+65-6272-5300
Zambia	www.hp.com/support		

## Product Regulatory and Environmental Information

For product regulatory and environmental information, refer to the product CD. Also consult Appendix A, *Replacing the Batteries and Answers to Common Questions* in the *HP 10bII+ Financial Calculator User's Guide*.

## HP Limited Hardware Warranty and Customer Care

This HP Limited Warranty gives you, the end-user customer, express limited warranty rights from HP, the manufacturer. Please refer to HP's Web site for an extensive description of your limited warranty entitlements. In addition, you may also have other legal rights under applicable local law or special written agreement with HP.

### Limited Hardware Warranty Period

Duration: 12 months total (may vary by region, please visit [www.hp.com/support](http://www.hp.com/support) for latest information).

### General Terms

**EXCEPT FOR THE WARRANTIES SPECIFICALLY PROVIDED FOR IN SUBSEQUENT PARAGRAPHS OF THIS SECTION, HP MAKES NO OTHER EXPRESS WARRANTY OR CONDITION WHETHER WRITTEN OR ORAL. TO THE EXTENT ALLOWED BY LOCAL LAW, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY SET FORTH IN THE SUBSEQUENT PARAGRAPHS OF THIS SECTION.** Some countries, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country to country, state to state, or province to province. **TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.** Some countries, States or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. **FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.** Notwithstanding the above disclaimers, HP expressly warrants to you, the end-user customer, that HP hardware, accessories and supplies will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or like-new. HP also expressly warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above,

due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software media which does not execute its programming instructions due to such defects.

## **Exclusions**

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product with proof of purchase. HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.