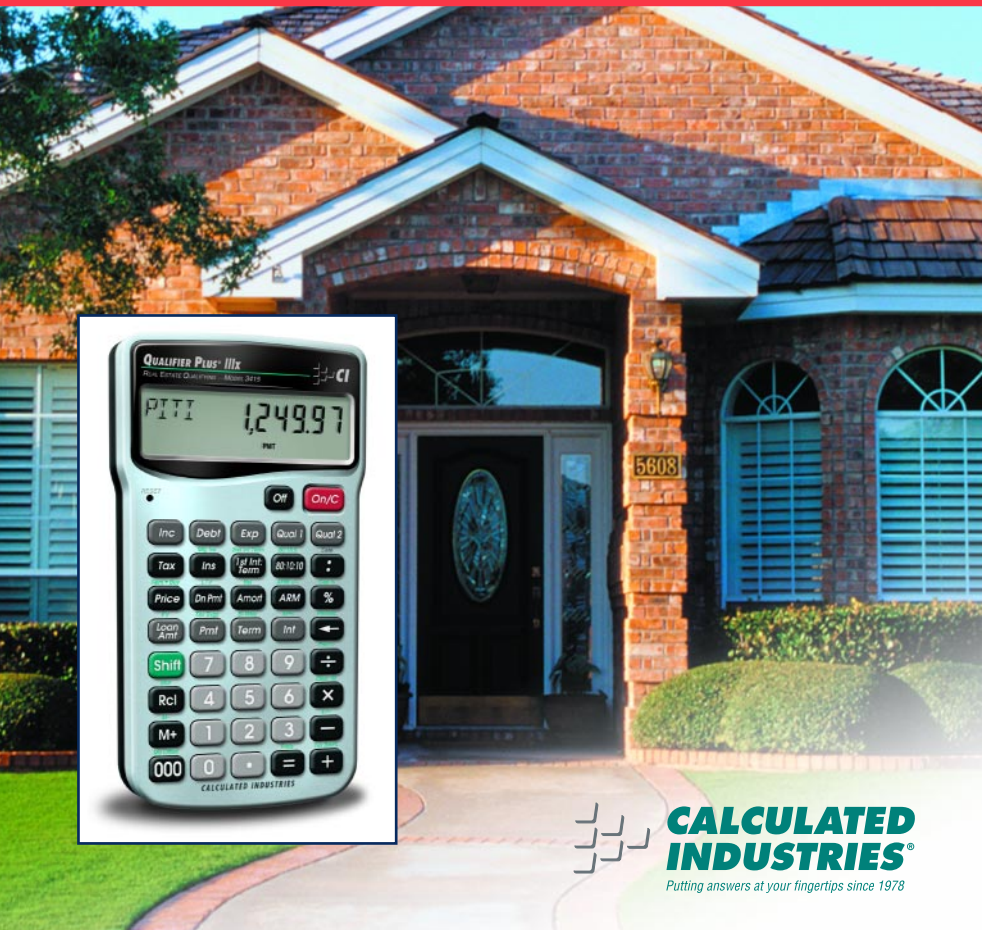
QUALIFIER PLUS® IIIx

ADVANCED RESIDENTIAL REAL ESTATE FINANCE CALCULATOR
with COMPLETE BUYER QUALIFYING

Model 3415

User s Guide



CALCULATED INDUSTRIES®
Putting answers at your fingertips since 1978

Introducing the QUALIFIER PLUS® IIIX Mortgage Loan Calculator

The *QUALIFIER PLUS IIIX* was custom-designed for mortgage lenders and residential real estate professionals. With the push of a few buttons, it will pre-qualify prospective buyers instantly and solve hundreds of mortgage loan problems with ease! It's the most *complete* and *easy-to-use* real estate finance calculator on the market!

Features:

- Easy and Complete Buyer Qualifying
- Find Qualifying Loan Amount, Income Required and Maximum Allowable Debt
- Use 2 Qualifying Ratios at Once to Compare Different Loans (e.g., conventional vs. FHA/VA loans)
- Find the Restricted and Unrestricted Qualifying Loan Amount
- Instant P&I, PITI and Total Payment
- Interest-Only Payment
- Expanded Tax and Insurance Capabilities
- Built-in Sales Price and Down Payment
- Works in Annual Term and Interest
- Flexible, "what if" Loan or TVM Calculations — *Finds Loan Amount, Term, Interest or Payment*
- Future Value and Appreciation
- Complete Amortization
- Remaining Balances/Balloon Payments
- Adjustable Rate Mortgages (ARMs)
- APR and Total Finance Charges
- Bi-Weekly Loans
- Trust Deeds (investments)
- Date Math
- Also Works as a Standard Math Calculator

New!

- 1st and 2nd Trust Deeds (80:10:10/80:15:5), or Combo Loans
- APR, including Mortgage Insurance
- Income Tax Savings, Mortgage Interest Deduction
- Interest-Only Payments
- Loan-to-Value (LTV)
- Odd-Days Interest (ODI) and Month Offset
- Rent vs. Buy

TABLE OF CONTENTS

GETTING STARTED 5

KEY DEFINITIONS 5
Basic Operation Keys 5
Mortgage Loan (TVM) Keys 6
Tax Savings Keys 9
Rent vs. Buy Keys 10
Qualifying Keys 10
Tax, Insurance and Expense Keys 13
1st and 2nd Trust Deeds (Combo Loan) Keys 14
BASIC ARITHMETIC EXAMPLES 16
Arithmetic 16
Percentage Calculations 16
Figuring Straight % Commission 16
Reduction in Listing Price (Discount %) 17
Simple, One-Year Home Appreciation (Add-on %) 17
Date Examples 18
CALCULATOR SETTINGS 19
Decimal Place Selection 19
Preference Settings 20
MEMORY 22
Accumulative Memory 22
Memory Storage Keys (M0-M6) 23

EXAMPLES 25

MORTGAGE LOANS/TIME-VALUE-OF-MONEY (TVM) 25
Finding the Monthly Mortgage (P&I) Payment 26
Finding the Interest Rate 26
Finding the Term of a Loan 26
Finding the Loan Amount 27
Paying Off a Mortgage Early (Making Larger Payments) 27
Simple Interest vs. Compound Interest 28
Future Value 28
Appreciation 28
Non-Monthly Loans 29
Finding a Quarterly Payment 29
Sales Price/Down Payment 30
Finding Loan Amount Based on Sales Price and Down Payment 30
Taxes and Insurance 31
Setting Tax and Insurance % Rates 32

Recalling Tax and Insurance % Rates 32
Setting Tax and Insurance $ 32
Calculating Tax and Insurance % or $ 33
PITI Payment (Tax and Insurance Entered as %) 34
Total Payment (Including Expenses) and Interest-Only Payment 34
Estimated Income Tax Savings and "After-Tax" Payment 35
Rent vs. Buy 36
Adjustable Rate Mortgages 37
ARM Payment — *Worst-Case Scenario* 38
ARM Payment — *Using Lifetime Cap* 39
Decreasing ARM Payment 40
Increasing and Decreasing ARM Payment 40
Amortization and Remaining Balance 41
Notes on Amortization 41
Total Principal and Interest for a 30-Year Loan 42
Amortization List for Individual Year(s) — *Using "Next" Feature* 43
Amortization List for Individual Year(s) — *Using Month Offset* 44
Amortization List for Individual Payment(s) 45
Amortization List for a Range of Payments or Years 46
APR and Total Finance Charges 47
Finding APR, Total Finance Charges (Excluding Mortgage Insurance) 47
Prepaid/Odd-Days Interest and APR 48
Balloon Payment/Remaining Balance Needed to Pay Off a Loan 49
Bi-Weekly Loans 49
Bi-Weekly Term Reduction and Payment 50
Trust Deeds and Discounted Notes 50
Purchase Price of a Note — *Fully Amortized* 51
Finding the Yield on a Discounted Note 51
Finding the Value and Discount of a Trust Deed 52
BUYER QUALIFYING 53
QUALIFYING EXAMPLES 54
Recalling Income/Debt Qualifying Ratios 54
Storing New Income/Debt Qualifying Ratios 54
Finding Qualifying Loan Amount and Sales Price (Simple Example Excluding Tax/Insurance) 55
Qualifying Loan Amount and Sales Price (Complete Example Including Down Payment, Tax/Insurance, Monthly Association Dues) 56
"Restricted" Qualifying 57

"Unrestricted" Qualifying 57
Qualifying Comparison (Comparing 2 Different Loans or Ratios at Once) 58
Finding Income Required and Allowable Monthly Debt 59
Solving for Actual Qualifying Ratios 60
1ST AND 2ND TRUST DEEDS (COMBO LOANS) 61
Combo Loan (80:10:10) vs. Fixed-Rate Loan with Mortgage Insurance 62
Combo Loan (80:15:5) vs. Fixed-Rate Loan with Mortgage Insurance 64
Combo Loan — *Entering a New LTV* 66

APPENDIX 68

Default Settings 68
Reset 68
Error Codes 68
Auto Shut-Off 69
Batteries 69
Repair and Return 69
Warranty 70
Legal Notes 71
Looking For New Ideas 71

INDEX 72

KEY DEFINITIONS

Basic Operation Keys

Off — Turns all power off. The memory and most financial registers are cleared.

On/C — If off, turns power on. If on, a single press clears the last entry while a second press in succession clears all non-permanent registers.*

**Clears Loan Amount, Payment, Price, Down Payment, Income, Debt, Expense, and Mortgage Insurance/MI (unless MI is set to hold; see Preference Settings).*

+ − × ÷ = — Arithmetic operation keys.

0 - 9 — Digits used for keying in numbers.

000 — Triple-zero key (saves time when entering 000 values).

← — Backspace key (deletes incorrect entries one digit at a time).

• — Decimal point.

% — ***Percent*** — Four-function (+, –, x, ÷) percent key. See **page 16** for examples.

M+ — ***Memory*** — Adds the displayed number to the cumulative memory. Pressing **Shift** **M+** *(M-)* will subtract the displayed value from memory. Pressing **Rcl** **M+** recalls and displays the memory contents. Pressing **Rcl** **Rcl** clears the memory. See **page 22** for details.

Rcl — ***Recall*** — Recalls and displays the stored values in most keys/functions, such as the TVM keys, payments per year, etc. (e.g., **Rcl** ***Int***). Also used for Memory functions.

Shift — Works with other keys to set or activate second functions (it will perform the function printed above the key on the calculator's face). Also used to set the number of displayed decimal places (see section on **Decimal Place Selection**, **page 19**).

Shift (–) ***Change Sign (+/–)*** — Changes the sign of the displayed value from positive to negative or vice versa.

Shift (×) ***Clear All*** — Clears all entered values and returns any stored values to their default settings. Use this only with caution, as it will reset ratios, Periods per Year, etc. back to their defaults (see the **Appendix** for a list of these settings).

Note: Clear All will not affect any changes made to Preference Settings (with the exception of Payments/Year and Decimal Places, which are returned to their defaults), unless you perform a Reset (see ***page 68****).*

Shift (=) ***Preferences (Prefs)*** — Activates the Preference Mode, where you can select custom settings (see **page 20**).

Mortgage Loan (TVM) Keys

The following keys let you solve Time-Value-of-Money (TVM) problems, such as finding a Loan Payment, Term, Interest or Future Value, Amortization or Bi-Weekly loans. Other useful keys, such as Price and Down Payment, are also included. These mortgage loan keys let you easily demonstrate various "what if" loan scenarios to your clients.

Loan Amt ***Loan Amount*** — Enters or solves for the initial loan amount or present value of a financial problem.

Pmt ***P&I, PITI Payment, Total Payment, Interest-Only Payment*** — Enters or solves for the periodic principal and interest (P&I) payment. Pressing Pmt a second time in succession calculates the PITI payment (P&I plus property tax, property insurance and mortgage insurance, if entered). The third press of Pmt computes the total payment (PITI plus any entered expenses, such as homeowner's association dues and other housing expenses). The fourth press calculates the interest-only payment.

Term Enters or solves for the number of years. Second press displays the number of periods. You may enter a periodic term, if you prefer, by pressing the Shift (←) *(periodic)* keys (e.g., 3 6 0 Shift (←) Term instead of 3 0 Term). An entered term greater than 45 will be classified as periodic, not annual.

*Note: Stored permanently, until you change it or perform a Clear All (*Shift (×)*).*

Int — ***Interest*** — Enters or solves for the annual interest rate. Second press gives the periodic rate.

Note: Stored permanently, until you change it or perform a Clear All (Shift ⌫).

Shift **Loan Amt** — ***Future Value (FV)*** — Enters or solves for the future value of a financial problem.

Price — ***Sales Price*** — Enters or calculates Sales Price based on the entries of Loan Amount (or equivalent mortgage components) and Down Payment.

Dn Pmt — ***Down Payment*** — Enters (in either percent or dollars) or calculates Down Payment, based on the entries of Loan Amount (or equivalent mortgage components) and Sales Price. A second press changes the entered down payment from a dollar figure to a percent, or vice versa.

Note: Any number under 100 is assumed to be a percent down payment. You do not have to label the value as a percent.

Shift **Dn Pmt** — ***Loan-to-Value (LTV)*** — Calculates the loan-to-value percent when a Down Payment and Sales Price, Loan Amount and Down Payment, or Loan Amount and Sales Price are entered. Also calculates the above dollar values if an LTV percent and one of the above values are entered (e.g., entered Sales Price and LTV% will calculate Down Payment and Loan Amount).

Shift **Int** — ***Annual Percentage Rate (APR)*** — Calculates APR (for fixed-rate loans only) based on the entry of points and/or non-recurring loan fees paid at initiation. It also calculates total finance charges, monthly mortgage insurance, and PIMI payment, based on the entry of mortgage insurance via the **Shift** **Ins** keys.

Shift **←** — ***Periodic*** — Used to specify a mortgage component (Term or Interest), Income, or Amortization/Remaining Balance value as per period rather than *per year*. For example, 3 6 0 **Shift** **←** **Term** enters 360 periods, or months.

Shift ÷ — ***Payments per Year (Pmt/Yr)*** — Used to set the number of payment periods per year. Default value is 12, for monthly.

Note: You can store the number of payments/year permanently or semi-permanently. See "Preference Settings" on ***page 20****).*

Amort — ***Amortization (Amort)*** — Finds total interest, principal, remaining balance, remaining term and estimated mortgage interest tax deduction.

The output of this key is as follows:

Press	Display or Calculation
1	Displays range of periods
2	Calculates total interest for period range
3	Displays total principal for range
4	Calculates total principal and interest
5	Calculates remaining balance
6	Calculates remaining term
7	Calculates estimated mortgage interest tax deduction for the specified period, based on the default tax bracket of 28%*

**You may enter any tax bracket (e.g., 30% press 30 Shift + and recalculate amortization values).*

Note: This is only for estimating a mortgage interest tax deduction — it does not include property tax. See "Tax Savings" keys for income tax savings including property tax and mortgage interest on ***page 9****.*

Shift Amort — ***Remaining Balance (Bal)*** — Displays the remaining balance when preceded by a single year or range of years (or individual payment or range of payments by using the Shift ← keys). Note that you can also view the remaining balance as part of the Amortization display (see above Amort description).

. — ***Colon Separator (Date)*** — Used as a separator for entering dates, ARM adjustments, qualifying ratios, Combo Loan (1st/2nd) interest and terms, and for entering amortization ranges.

Shift 000 — ***Month Offset (Mo Offset)*** — Used to set the first month of payment if other than January.

Shift . — ***Odd-Days Interest*** — Calculates the prepaid interest, or simple interest accumulated (based on a 360-day year) during the days before the first loan payment is made using the interest rate stored in the Interest register.

ARM — ***Adjustable Rate Mortgage*** — Calculates the payment and re-amortizes a fully or partially amortized Adjustable Rate Mortgage based on the inputs of both an Interest Adjustment and a Term Adjustment, which are entered using the Colon ⁝ key (Interest Adjustment ⁝ Term Adjustment). For example, an ARM which increases 1% every six months is entered 1 ⁝ • 5 ARM; an ARM which decreases 1% every six months is entered 1 ⁝ • 5 Shift ARM. (ARM rates are stored permanently.)

Shift % — ***Lifetime Interest Cap (ARMs)*** — Sets the lifetime interest cap for ARMs by entering the maximum interest increase. This is a permanent setting. To clear, set the cap back to zero (0 Shift %).

Shift Term — ***Bi-Weekly (Bi-Wkly)*** — Converts a regular monthly loan to a Bi-Weekly loan, where the buyer may realize significant interest savings. After loan variables are entered, pressing Shift Term displays the reduction in term. The second press of Term shows the total interest savings; third press displays the total interest *paid*; fourth press displays the total principal; and fifth press displays the total principal and interest paid. Pressing Pmt will calculate the bi-weekly payment. Pressing Shift Term again will return and re-calculate to the original term, or pressing On/C twice will exit Bi-Weekly Mode.

Tax Savings Keys

Shift Pmt — ***Estimated Tax Savings (Tax Svgs)*** — Calculates an estimated annual income tax savings for a mortgage, based on entered loan variables, including property tax, mortgage interest, and tax bracket. You must enter a tax bracket, then press Shift Pmt Pmt to display the estimated annual income tax savings; the third consecutive press of Pmt will display the monthly tax savings; and the fourth press will display the estimated "after-tax", or net mortgage payment.

Note: This function is different from the mortgage interest deduction figured in the Amortization calculation, as it also includes property tax for a total estimated tax savings and only provides an annual estimate, not an estimate for a specified range. (See the Amort key definition for details).

Rent vs. Buy Keys

Shift **Price** — ***Rent vs. Buy*** — Calculates a comparable sales price, loan amount, and mortgage payment versus the cost of monthly rent. You must enter loan variables and a tax bracket via **Shift** **+**, then enter the prospective buyer's current rent and press **Shift** **Price**. Consecutive presses of **Price** will calculate the comparable sales price, loan amount, monthly loan payment (including tax/insurance, if entered), and estimated annual/monthly income tax savings.

Shift **+** — ***Tax Bracket (Tax Brkt%)*** — Enters a buyer's tax bracket for figuring Rent vs. Buy calculations or for calculating an estimated mortgage interest tax deduction in the Amortization calculation. Press **Rcl** **+** to display stored percentage. *(Default = 28%)*

Qualifying Keys

Qual 1 — ***(Qualify Based on 28%-36%)*** — A multi-function key which, based on entered variables, performs the following pre-qualifying functions:

1) Stores income and debt ratios for loan qualifying. Ratios are entered using the Colon **:** key (Income Ratio **:** Debt Ratio). For example, income and debt ratios of 28% and 36%, respectively, are entered and permanently stored as follows: **2** **8** **:** **3** **6** **Qual 1**. Default income and debt ratios for this key are 28% and 36%, respectively. You may change qualifying ratios, if desired.

What are Qualifying Ratios?

The income ratio calculates the allowable percentage of income for the total housing payment, while the debt ratio finds the allowable percentage of income for the total housing payment, plus long-term debts (usually 12 months or longer). The conservative rule is that total housing expenses should be 28% or less of income, while total housing expense plus monthly debt should be 36% or less of income.

(Cont'd)

INCOME RATIO =

TOTAL HOUSING EXPENSE
GROSS MONTHLY INCOME

DEBT RATIO =

TOTAL HOUSING EXPENSE + MONTHLY DEBT
GROSS MONTHLY INCOME

Note: Typically, when figuring government loans (FHA/VA), these formulas also include estimated expenses for maintenance and utilities (added to the Total Housing Expense for both ratios). Also, real estate financing and qualifying varies per region and by lender, who of course, take other factors into consideration, such as a buyer's credit and employment history.

2) Calculates the maximum loan amount for which a buyer may qualify, based on the stored income and debt qualifying ratios and the entered:

- Term
- Interest
- Annual Income
- Monthly Debt

—and optional—

- Annual Property Tax and Insurance
- Annual Mortgage Insurance (Private Mortgage Insurance or PMI)
- other monthly housing expenses (e.g., home-owner's association dues)

The output of this key is as follows:

Press	Calculation
1	Displays stored Qualifying Ratios (e.g., 28%-36%)
2	Restricted/Maximum Qualifying Loan Amount *
3	Buyer's Actual Ratios (Income%:Debt%)
4	Unrestricted Qualifying Loan Amount *
5	Maximum Allowable Debt

(Cont'd)

**Note: The Maximum Qualifying Loan Amount is the "restricted" loan amount the buyer may qualify for. This loan amount is based on whichever of the two ratios — income or debt — limits the buyer the most. The Unrestricted Qualifying Loan Amount, however, is the higher loan amount. This loan amount is based on whichever of the two ratios — income or debt — limits the buyer the least. In other words, whichever ratio will give the buyer the highest qualifying loan amount. For this Unrestricted loan amount, the calculator will display the letters "UNR" (for unrestricted) in the display and the word "INC" or "DEBT" to indicate what ratio side this loan amount was based from (i.e., income or debt).*

This restricted/unrestricted qualifying loan comparison is useful to show clients what size loan they could qualify for if they paid off debt or increased income.

3) Calculates the annual income required and allowable monthly debt for a desired loan amount or sales price based on the stored income and debt qualifying ratios and the entered:

- Term
- Interest
- Price (down payment) or Loan Amount

4) Also finds buyer's actual income and debt ratios given both buyer and property data. By default, the first press of Qual 1 displays the stored qualifying ratios and the second press calculates the buyer's actual ratios.

Qual 2 ***(Qualify Based on 29%-41%)*** — Stores additional Income and Debt ratios (e.g., FHA/VA) and operates identically to the Qual 1 key. Default Income and Debt ratios for this key are 29% and 41%, respectively.

Note: You can store whatever ratios you desire in the Qual 1 or Qual 2 keys.

Inc ***Income*** — Enters the buyer's *annual* income for loan qualifying. Enters a *monthly* income when preceded by the Shift ← *(periodic)* keys (e.g., 5 0 0 0 Shift ← Inc).

Debt Enters buyer's long-term, *monthly* debt (e.g., car payments, credit cards with large balances/long-term monthly payments).

Tax, Insurance and Expense Keys

In addition to Qualifying, the following keys are also involved in PITI or total payment calculations (e.g., they are added to the monthly payment):

Tax

Property Tax — Used for calculating PITI and Total payment, and Qualifying. Stores estimated annual property tax in either percent or dollar amount. If entered as an annual dollar amount, a press of **Rcl** and **Tax** converts to the monthly tax amount, and pressing **Tax** again converts to the annual percentage rate. If entered as a percentage, pressing **Rcl** **Tax** converts to the annual dollar amount, and pressing **Tax** once more shows the monthly tax.

Note: Entering a number equal to or less than 10 is assumed to be an annual percentage. Property tax is calculated from the sales price (therefore, you should also enter a Down Payment).

Ins

Property Insurance — Used for calculating PITI and Total payment, and Qualifying. Stores estimated annual property (or homeowner's) insurance in either percent or dollar amount. If entered as an annual dollar amount, a press of **Rcl** and **Ins** converts to the monthly insurance amount or premium, and pressing **Ins** again converts to the annual percentage rate. If entered as a percentage, pressing **Rcl** **Ins** converts to the annual dollar amount, and pressing **Ins** once more shows the monthly insurance.

Note: Entering a number equal to or less than 10 is assumed to be an annual percentage. Property insurance is calculated from the sales price (therefore, you should also enter a Down Payment).

Shift **Ins**

Mortgage Insurance (Mtg Ins) — Used for calculating PITI and Total payment, and Qualifying. Stores estimated annual mortgage insurance (or Private Mortgage Insurance) in either percent or dollar amount. If entered as an annual dollar amount, a press of **Rcl** and **Shift** **Ins** converts to the monthly mortgage insurance amount or premium, and pressing **Ins** again converts to the annual percentage rate. If entered as a percentage, pressing **Rcl** **Shift** **Ins** converts to the annual dollar amount, and pressing **Ins** once more shows the monthly insurance.

Note: Entering a number equal to or less than 10 is assumed to be an annual percentage. Mortgage insurance is calculated from the loan amount.

Note: Tax and Insurance entered as dollar amounts will remain fixed, even if sales price or loan amount is changed. However, if entered as a percentage of sales price or loan amount, these items will automatically be re-calculated if sales price or loan amount is changed.

Exp ***Expense*** — For Total Payment and Qualifying. Enters monthly housing expense (e.g., homeowner's association dues, maintenance and utilities).

1st and 2nd Trust Deeds (Combo Loan) Keys

The Combo Loan keys show the savings of obtaining a 1st and 2nd trust deed (TD) loan over a single, fixed-rate loan where mortgage insurance, or private mortgage insurance (PMI), is required.

This routine requires a fixed-rate loan to be entered using the standard **Loan Amt**, **Pmt**, **Int** and/or **Term** keys so that a loan comparison can be made.

80:10:10 ***Loan-to-Value Combo Loan for 80:10:10*** — This key provides a loan comparison (see below key outputs*) of an 80:10:10 combo fixed-rate loan versus a single, fixed-rate loan requiring mortgage insurance. The stored values are a percentage of the sales price (e.g., 80:10 identifies that 80% of the price is covered by the 1st TD, 10% of the price is covered by the 2nd TD and the remaining 10% is covered by the down payment).

Shift **80:10:10** ***Loan-to-Value Combo Loan for 80:15:5*** —The second function of this key provides a loan comparison (see below*) of an 80:15:5 combo fixed-rate loan versus a single fixed-rate loan requiring mortgage insurance. The stored values are a percentage of the sales price (e.g., 80:15 identifies that 80% of the price is covered by the 1st TD, 15% of the price is covered by the 2nd TD and the remaining 5% is covered by the down payment).

Note: You may also enter any LTV for either **80:10:10** *or* **Shift** **80:10:10** *(80:15:5) Combo Loans keys. For example, to enter a 90:5 LTV, enter* 9 0 . 5 **80:10:10** *or* 9 0 . 5 **Shift** **80:10:10** *and continue to press the* **80:10:10** *key to find the below values.*

***80:10:10 and Shift 80:10:10 (80:15:5) Key Output:**

For a comparison of a fixed-rate combo loan versus a fixed-rate loan with required mortgage insurance, each key press (once all other loan values are entered, including 1st and 2nd Interest:Term) will calculate:

Press	Calculation
1	Combo Loan Combined (Blended) Interest Rate
2	Equivalent Interest Rate of Fixed Rate Mortgage with Mortgage Insurance
3	Combo Loan Combined (1st/2nd TD) Payment
4	Equivalent Payment of Fixed Rate Mortgage with Mortgage Insurance
5	Monthly Savings over Fixed-Rate Loan with Mortgage Insurance
6	Adjusted 2nd Term (if Savings Applied to 2nd TD)
7	1st Trust Deed Loan Amount
8	2nd Trust Deed Loan Amount
9	1st Trust Deed Payment
10	2nd Trust Deed Payment
11	Displays LTV

1st Int: Term — ***1st TD Interest:Term*** — Stores the annual interest and term for the 1st fixed-rate TD. These values are used when computing the 1st:2nd fixed Combo Loan. Entry is made using the ⋮ key (Interest ⋮ Term). Both interest and term values are required for a valid entry. Values will be retained until changed or reset.

Shift 1st Int: Term — ***2nd TD Interest:Term*** — Stores the annual interest and term for the 2nd fixed-rate TD. Entry is made using the ⋮ key (Interest ⋮ Term). Both interest and term values are required for a valid entry. Values will be retained until changed or reset.

BASIC ARITHMETIC EXAMPLES

Arithmetic

This calculator uses standard chaining logic, which simply means that you enter your first value, the operator (+, −, ×, ÷), the second value and then the equals sign (=).

A.	3 + 2 =	**5.00**
B.	3 − 2 =	**1.00**
C.	3 × 2 =	**6.00**
D.	3 ÷ 2 =	**1.50**

Percentage Calculations

The Percent % key can be used for finding a given percent of a number or for working add-on, discount, or division percentage calculations.

A.	800 × 25 % =	**200.00**
B.	250 + 10 % =	**275.00**
C.	25 − 50 % =	**12.50**
D.	200 ÷ 50 % =	**400.00**

The Percent % function is a key that has special applications for real estate professionals — especially when figuring a commission amount.

Figuring Straight % Commission

The commission for the listing office is 3%. If the property sells for $259,650, what is the listing office's commission?

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter sales price	259650	**259,650.**
Multiply by commission %	× 3 % =	**7,789.50**

— DO NOT CLEAR CALCULATOR —

What if the listing agent works on a 50/50 split with his or her broker? What is the listing agent's share of this commission?

STEPS	KEYSTROKES	DISPLAY
Multiply by 50 percent	× 50 % =	**3,894.75**

Reduction in Listing Price (Discount %)

A nervous seller has had her property on the market for just over four months listed at $175,500. Because she is anxious to move into a new home, she wishes to reduce the listing price by 5%. Calculate both the amount of reduction in dollars and the new, lowered listing price.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter sales price	1 7 5 5 0 0	**175,500.**
Subtract 5%	− 5 %	**8,775.00**
Find new listing price	=	**166,725.00**

Simple, One-Year Home Appreciation (Add-on %)

Properties in your area have been going up in value about 6% per year. If you purchase a $275,000 home today, what will it be worth in one year, assuming the same rate of appreciation continues?

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter current value	2 7 5 000	**275,000.**
Add 6%	+ 6 %	**16,500.00**
Find appreciated value	=	**291,500.00**

Note: See ***page 28*** *for another example of future value or appreciation.*

Date Examples

Using the . key, you can quickly solve common real estate date problems: escrow or closing dates, listing expiration dates, and the number of days prepaid interest, etc. You enter a date as follows: Numerical Month . Numerical Day . and two-digit Numerical Year.

The date function lets you: 1) add a number of days to a date to find a second date (in the future), 2) subtract a number of days from a date to find a second date (in the past), and, 3) subtract one date from another date to find the number of days in between. For example, if a 45-day escrow begins April 26, 2004, what is the closing date and day?

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter month	4 .	**4-**
Enter day	2 6 .	**4-26-**
Enter year	0 4	**4-26-04**
Add 45 days	+ 4 5 =	**THU 06-10-04**

Find the number of days to calculate prepaid interest due at closing, if the escrow closing date is 10/14/03 and the first payment is due 11/1/03.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter 1st payment date	1 1 . 1 . 0 3	**11-1-03**
Subtract closing date to find number of days	− 1 0 . 1 4 . 0 3 =	**18.00**

CALCULATOR SETTINGS

Decimal Place Selection

With the Shift key, you have the option of selecting the number of decimal places you'd like to display. The values are rounded using conventional 5/4 rounding. You can do this prior to finding an answer or afterwards.

Press Shift followed by the number of decimal places you wish to display:

Shift 6	**0.000000**
Shift 5	**0.00000**
Shift 4	**0.0000**
Shift 3	**0.000**
Shift 2	**0.00**
Shift 1	**0.0**
Shift 0	**0.**
Shift •	**floating point**

To return to the standard two-decimal place setting, press Shift 2.

Note: This setting will remain until you turn your calculator off, perform a Clear All (Shift ON), or until you change it using the commands above. You can select to permanently maintain your decimal place selection (remains even after you turn the calculator off) by selecting "Hold Entry" for decimal settings under Preferences on ***page 20****.*

Preference Settings

Your calculator has a Preference Mode, which allows you to program the calculator to various settings. For example, it lets you store certain values permanently, display certain values, or show values in a specific order.

To access the Preference Mode, press Shift, then ⊖, then keep pressing ⊖ to toggle through the settings listed below. Press the ⊕ key to advance through the sub-settings. Use the ⊖ key to back up within the sub-settings.

To return the calculator to its default, or factory-set, Preference Settings, perform a total **Reset** (see **page 68**).

After Shift, Keep Pressing ⊖:	**Display**	**Description** *(Press ⊕ to Advance within each category, ⊖ to Back up):*
1	**Decimal Places**	
	- DEC OFF 0.00 —	Clears decimal place setting/resets to 0.00 at Off. *(Default)*
	- DEC Hold Entry —	Permanently sets number of decimal places.
2	**Payments Per Year**	
	- P/Y OFF 12.00 ANN—	Resets to 12.00 at Off. *(Default)*
	- P/Y Hold Entry ANN—	Permanently sets pmts/year.
3	**Property Tax/Insurance (T/I)**	
	- Clr OFF TAX INS —	Clears all T/I (% and $) values at Off. *(Default)*
	- Hold Pct. TAX INS —	Holds only T/I percent (%) entries at Off.
	- Hold All TAX INS —	Holds all T/I (% and $) values at Off.
	- Clr-Clr TAX INS —	Clears all T/I (% and $) values at double press of On/C (or On/C On/C).

(Cont'd)

(Cont'd)

After Shift, Keep Pressing ⊖:	**Display**	**Description *(Press ⊕ to Advance within each category, ⊖ to Back up):***
4	**Mortgage Insurance (MI)**	
	- Clr-Clr M Ins —	Clears mortgage insurance (% and $) upon On/C On/C. *(Default)*
	- Clr OFF M Ins —	Clears mortgage insurance (% and $) at Off.
	- HOLD Pct. M Ins —	Holds only percent (%) mortgage insurance entry at Off.
	- HOLD ALL M Ins —	Holds (% or $) mortgage insurance entry at Off.
5	**Amortization/Single Entries**	
	- AMRT Ent-Ent —	Displays amortization for specified year only — *e.g., enter* 5 Amort ⊖ *payments 49-60. (Default)*
	- AMRT 1-Ent —	Displays amortization from beginning to specified year — *e.g., enter* 5 Amort ⊖ *payments 1-60.*
6	**Display Qualifying Ratios**	
	- Q-R PRESS 1 —	Displays ratio at beginning of sequence. *(Default)*
	- Q-R AT END —	Displays ratio at end of sequence.

MEMORY

Accumulative Memory

Whenever the M+ key is pressed, the displayed value will be added to cumulative memory. This value will remain in Memory until cleared or when the calculator is turned off.

Other Memory functions:

FUNCTION	KEYSTROKES
Recall total in Memory	Rcl M+
Display and clear Memory	Rcl Rcl
Subtract displayed value from Memory	Shift M+
Replace Memory with displayed value	Shift Rcl M+

The Memory is semi-permanent; that is, it will only be cleared when you:

1) turn off the calculator;
2) press Rcl Rcl; and
3) press Shift ⊠ (Clear All).

Examples:

STEPS	KEYSTROKES	DISPLAY
Store number into Memory	3 5 5 M+	**355.00**
Add number to Memory	2 5 5 M+	**255.00**
Recall total in Memory	Rcl M+	**610.00**
Subtract from Memory	7 4 5 Shift M+	**745.00**
Recall total in Memory	Rcl M+	**-135.00**
Replace Memory	5 0 Shift Rcl M+	**50.00**
Recall and clear Memory	Rcl Rcl	**50.00**

Memory Storage Keys (M0-M6)

In addition to the standard cumulative Memory (as described above), your calculator has six independent Storage Registers — **[M0]** through **[M6]** — that can be used to permanently store *single*, non-cumulative values. These values will be held when your calculator is turned off, and will only clear when a "Clear All" is performed (via Shift ⊠).

You can replace a value in one of these Memory registers by storing a new value in place of the stored value.

FUNCTION	KEYSTROKES
Store single value in M0	Shift Rcl 0
Store single value in M1	Shift Rcl 1
Store single value in M2-M6	Shift Rcl 2, 3, 4, 5 or 6
Clear register (e.g., M1)	0 Shift Rcl 1
Review stored value (e.g., M1)	Rcl 1
Clear stored value*	Shift ⊠

**Perform a Shift ⊠ (Clear All) with caution, as it will clear any stored values from your calculator's registers.*

Example:

Store 175 into M1, recall the value, and then store a new value in place of the first stored value:

KEYSTROKES	DISPLAY
1 7 5 Shift Rcl 1	M-1 175.00
Off On/C	0.00
Rcl 1	M-1 175.00
1 5 0 Shift Rcl 1	M-1 150.00

Additional Memory Storage Keys (M10-M19)

In addition to M0-M6 (as described previously), your calculator has ten additional independent Storage Registers — **[M10]** through **[M19]** — that can also be used to permanently store single, non-cumulative values. To access these storage registers, use the following keystrokes: Shift Rcl • **[#]**, with **[#]** being digits 0 - 9. These storage registers operate identically to M0-M6.

Examples:

Store 250 into M10 and recall the value:

KEYSTROKES	DISPLAY
2 5 0 Shift Rcl • 0	M-10 250.00
Off On/C	0.00
Rcl • 0	M-10 250.00

Store 350 into M11 and recall the value:

KEYSTROKES	DISPLAY
3 5 0 Shift Rcl • 1	M-11 350.00
Off On/C	0.00
Rcl • 1	M-11 350.00

Note: Repeat the above procedure for registers 12-19, using digits 2 – 9.

Note: To clear all above values stored in Memory, press Shift ⊠.

MORTGAGE LOANS/TIME-VALUE-OF-MONEY (TVM)

1. The basic loan keys — Loan Amt, Pmt, Term and Int — work just like you would say them. For example, if you want to borrow $100,000 for 30 years at 10% interest, just enter those three known variables and press the key for the *unknown* fourth variable: Pmt.
2. When computing future value problems, enter the present value into the Loan Amt key.
3. Financial values may be entered in any order you want.
4. Entered values for Term and Interest are permanently stored (they do not clear when the calculator is turned off).
5. The calculator's default setting is 12 payments per year, for monthly loans.
6. It is good practice to press On/C twice after completing a financial problem to ensure that you have cleared the previous Loan Amt and Pmt registers.
7. When solving for a financial component, the calculator may display the word "run" in the display. Solving for interest may take several seconds (up to 15) while the word "run" displays.
8. Once you have calculated an answer, for example, a payment, you can go back and change any financial variable and recalculate your new answer without re-entering all the other data. This is handy for demonstrating various "what if" loan problems.
9. Successive presses of the Pmt key will calculate: 1) the Principal and Interest (P&I) payment; 2) the PITI payment, which includes Property Tax, Property Insurance and Mortgage Insurance, if entered; 3) the Total payment (PITI plus any entered housing expenses); and 4) the Interest-Only payment.

Finding the Monthly Mortgage (P&I) Payment

Find the monthly P&I (principal and interest) payment on a 30-year, fixed-rate mortgage of $265,000 at 6.75% annual interest.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	2 6 5 000 Loan Amt*	265,000.00
Enter term	3 0 Term	30.00
Enter interest	6 • 7 5 Int	6.75
Find monthly P&I payment	Pmt	"run" 1,718.78

**Note: Use the 000 key to save keystrokes.*

What is the new payment, if the interest rate is lowered to 6.5%?

STEPS	KEYSTROKES	DISPLAY
Enter new interest rate	6 • 5 Int	6.50
Find monthly P&I payment	Pmt	"run" 1,674.98

Finding the Interest Rate

Find the interest rate on a mortgage where the loan amount is $98,500, the term is 30 years, and the payment is $1,150 a month.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	9 8 5 0 0 Loan Amt	98,500.00
Enter term	3 0 Term	30.00
Enter monthly payment	1 1 5 0 Pmt	1,150.00
Find annual interest	Int	"run" 13.78
Find periodic interest	Int	1.15

Finding the Term of a Loan

How long does it take to pay off a loan of $15,000 at 10% interest if you make payments of $200 each month?

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	1 5 000 Loan Amt	15,000.00
Enter interest	1 0 Int	10.00
Enter monthly payment	2 0 0 Pmt	200.00
Find term in years	Term	"run" 9.85
Find periodic term	Term	118.19

Finding the Loan Amount

Approximately how much could you borrow if the interest rate was 7.8% on a 30-year loan and you could afford $1,500 in monthly payments? What if the interest rate was lowered to 7.5%?

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		0.00
Enter interest	7 • 8 Int		7.80
Enter term	3 0 Term		30.00
Enter monthly payment	1 5 0 0 Pmt		1,500.00
Find loan amount	Loan Amt	"run"	208,370.81
Enter new interest rate	7 • 5 Int		7.50
Find new loan amount	Loan Amt	"run"	214,526.44

Paying Off a Mortgage Early (Making Larger Payments)

How long does it take to pay off a 30-year, fixed-rate mortgage of $150,000 at 8.5% interest if you add an extra $200 to the mortgage payment each month?

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		0.00
Enter loan amount	1 5 0 000 Loan Amt		150,000.00
Enter interest	8 • 5 Int		8.50
Enter term	3 0 Term		30.00
Find monthly P&I payment	Pmt		1,153.37
Add additional payment amount	+ 2 0 0 =		1,353.37
Enter as new payment amount	Pmt		1,353.37
Find reduced loan term	Term	"run"	18.15

Simple Interest vs. Compound Interest

If you borrow $5,000 at 6% simple interest, how much will you owe at the end of 5 years?

**This is a simple math problem and does not require the use of TVM keys.*

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Multiply loan amount by interest	5 000 × 6 % =	**300.00**
Multiply by term	× 5 =	**1,500.00**
Add original loan amount	+ 5 000 =	**6,500.00**

If the loan is compounded monthly, what will you owe?

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		**0.00**
Enter loan amount	5 000 Loan Amt		**5,000.00**
Enter term	5 Term		**5.00**
Enter interest	6 Int		**6.00**
Find future value	Shift Loan Amt	**"run"**	**6,744.25**

Future Value

Given any four components to a problem that includes a future value, you can calculate the fifth.

Appreciation

You purchased a home for $350,000 and want to know its value in 3 years, figuring an inflation or appreciation rate of 6%. *(Set periods to one per year.)*

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		**0.00**
Set to 1 payment/year	1 Shift ÷		**1.00**
Enter present value*	3 5 0 000 Loan Amt		**350,000.00**
Enter term in years	3 Term		**3.00**
Enter appreciation rate	6 Int		**6.00**
Find future value**	Shift Loan Amt	**"run"**	**416,855.60**
Return to 12 payments/year	1 2 Shift ÷		**12.00**

** Present Value (PV) = original purchase price; enter as* Loan Amt

*** Future Value (FV) =* Shift Loan Amt

Non-Monthly Loans

Most residential real estate loans are based on a monthly payment schedule. However, if you have a non-monthly loan, you must change the number of payments per year using a two-key sequence: Shift ÷. For example, here's how to set your calculator to four payments per year.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter # of payments/year	4 Shift ÷	**4.00**

To recall the currently stored number of payments:

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Recall # of payments/year	Rcl ÷	**4.00**

IMPORTANT: To return payments per year to the default value of 12, perform the following steps:

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter # of payments/year	1 2 Shift ÷	**12.00**

Finding a Quarterly Payment

Find the quarterly payment on a 10-year loan of $15,000 with an annual interest rate of 12%.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Set to 4 payments/year	4 Shift ÷	**4.00**
Enter loan amount	1 5 000 Loan Amt	**15,000.00**
Enter term in years	1 0 Term	**10.00**
Enter annual interest	1 2 Int	**12.00**
Find quarterly payment	Pmt	**"run" 648.94**
Reset to 12 payments/year	1 2 Shift ÷	**"run" 12.00**

Sales Price/Down Payment

One of the unique features of this calculator is its ability to work with not only Loan Amount, but with Sales Price and Down Payment. You can enter two values to find the third (e.g., enter Price and Down Payment to find Loan Amount). You may also enter the down payment in both percent or dollar format. For example, to enter 20%, enter 20 and press the DnPmt key (you do not have to label it as a percent). Or enter $20,000 (e.g., 2 0 000 DnPmt).

Note: A number under 100 entered as the Down Payment is assumed to be a percentage.

Note: When using Price, DnPmt, and Loan Amt keys, it's recommended that you always enter the two known values (Price and Down Payment), then solve for the third (Loan Amount), before calculating financial values.

Finding Loan Amount Based on Sales Price and Down Payment

Find both the down payment dollar amount and loan amount if the sales price is $250,000 and you're planning to put 20% down.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter sales price	2 5 0 000 Price	**250,000.00**
Enter down payment %	2 0 DnPmt	**20.00**
Find down payment $	DnPmt	**50,000.00**
Find loan amount	Loan Amt	**200,000.00**

Note: You can find Sales Price based on an entered Loan Amount and Down Payment, or find the Down Payment based on entered Sales Price and Loan Amount values.

Taxes and Insurance

This calculator has keys that store your estimated local annual Property Tax, Property Insurance, and Mortgage Insurance (if applicable) rates or dollar figures. This allows you to calculate the PITI (Principal, Interest, Tax, and Insurance) payment, in addition to the regular P&I payment. You may also enter monthly expenses, such as homeowner's association dues—these are included in the calculation of the total payment (PITI plus expenses).

By default, the Property Tax and Insurance values are cleared when the calculator is shut off, while the Mortgage Insurance value clears when you press On/C twice. However, you may use the Preference Settings (Shift =) to permanently store, or hold all Tax and Insurance (% and $) values when the calculator is turned off (see **page 20**).

Note: There's a separate Preference Setting for Mortgage Insurance.

Tax and Insurance can be entered as dollar amounts or percentages. If entered as percentages, the Sales Price or Loan Amount can be changed and tax and insurance will be recalculated automatically. If entered as dollar amounts, however, they will need to be re-entered for a change in Sales Price or Loan Amount to be correct. Entering values 10 or less are assumed to be annual percentage rates (you do not need to use the percent key).

—IMPORTANT— Property Tax and Property Insurance rates are based on the Sales Price (therefore, a Down Payment or Sales Price should be entered). The Mortgage Insurance rate is based on the Loan Amount. If neither Sales Price nor Down Payment has been entered, the Sales Price is defaulted to equal the Loan Amount (basically assuming a 100% loan), in which case the Tax and Insurance rates will be based on the Loan Amount value entered.

Note: If you are underwriting a loan, many lenders choose to use loan amount instead of price when figuring out Hazard Insurance. In this case, you will need to turn your Hazard Insurance into a dollar amount: Loan Amount x Hazard Insurance rate = Hazard Insurance dollar amount. By entering a lower amount into Insurance, it will improve the Buying Power of your client. However, the client will only be covered for the loan amount and not the complete value of the home.

Setting Tax and Insurance % Rates

Enter an annual property tax rate of 1.5%, a property insurance rate of 0.25%, and a mortgage insurance rate of 0.50%:

STEPS	KEYSTROKES	DISPLAY
Set property tax rate	1 • 5 Tax	**1.50**
Set insurance rate	• 2 5 Ins	**0.25**
Set mortgage insurance rate	• 5 Shift Ins	**0.50**

Recalling Tax and Insurance % Rates

Recall your stored rates:

STEPS	KEYSTROKES	DISPLAY
Recall tax rate	Rcl Tax	**1.50**
Recall insurance rate	Rcl Ins	**0.25**
Recall mortgage insurance rate	Rcl Shift Ins	**0.50**

Note: To change these values, simply enter new ones. Or, turn the calculator off then on, and the values will be cleared, unless they are programmed to hold under Preference Settings (see ***page 20****).*

Setting Tax and Insurance $

Enter annual property taxes estimated at $5,500, property insurance at $350 and mortgage insurance at $600:

STEPS	KEYSTROKES	DISPLAY
Set annual taxes	5 5 0 0 Tax	**5,500.00**
Set annual property insurance	3 5 0 Ins	**350.00**
Set annual mortgage insurance	6 0 0 Shift Ins	**600.00**

Note: Again, to review stored values, press Rcl *and the applicable key (e.g.,* Rcl Tax*).*

Calculating Tax and Insurance % or $

If loan variables are entered in addition to tax and insurance percentage rates or dollar values, the respective dollar values or percentage rates can be computed by simply pressing the applicable keys a second time. For example, enter an annual property tax rate of 1.5%, a property insurance rate of 0.25% and a mortgage insurance rate of 0.50%. Then enter a sales price of $250,000, 10% down, a term of 30 years and an interest rate of 8%. Calculate the loan, payments, and annual tax and insurance dollar amounts, or premiums:

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter property tax rate	1 • 5 Tax	**1.50**
Enter insurance rate	• 2 5 Ins	**0.25**
Enter mortgage insurance rate	• 5 Shift Ins	**0.50**
Enter price	2 5 0 000 Price	**250,000.00**
Enter down payment %	1 0 Dn Pmt	**10.00**
Enter term	3 0 Term	**30.00**
Enter interest	8 Int	**8.00**
Find loan amount	Loan Amt	**225,000.00**
Recall property tax %	Rcl Tax	**1.50**
Calculate property tax $	Tax	**3,750.00**
Recall property insurance %	Rcl Ins	**0.25**
Calculate property insurance $	Ins	**625.00**
Recall mortgage insurance %	Rcl Shift Ins	**0.50**
Calculate mortgage insurance $	Ins	**1,125.00**
Find P&I payment	Pmt	**1,650.97**
Find PITI payment	Pmt	**2,109.30**

Note: The same procedure can be performed to find the opposite — that is, to find the % rates based on entered annual dollar amounts or insurance premiums. Simply enter the tax/ins. dollar amounts and loan variables first, and press Rcl *and the tax/ins. key to calculate the percentage rate.*

PITI Payment (Tax and Insurance Entered as %)

Find the PITI payment on a 30-year, 6.5% mortgage if the home's selling price is $325,000 and the down payment is 5%. Annual property taxes are estimated at 1.3%, annual property insurance at 0.25%, and annual mortgage insurance at 0.45%.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter term in years	30 Term	30.00
Enter annual interest	6 • 5 Int	6.50
Enter sales price	325 000 Price	325,000.00
Enter down payment	5 Dn Pmt	5.00
Set tax rate*	1 • 3 Tax	1.30
Set property insurance rate*	• 2 5 Ins	0.25
Set mortgage insurance rate*	• 4 5 Shift Ins	0.45
Find loan amount	Loan Amt	308,750.00
Find P&I payment	Pmt	"run" 1,951.51
Find PITI payment	Pmt	2,487.08

** You may enter Tax, Insurance, or Mortgage Insurance as a percentage or dollar amount (i.e., ($)4225 Tax, ($)812.5 Ins, or ($)1389.38 Shift Ins).*

Total Payment (Including Expenses) and Interest-Only Payment

Find the total payment (including principal, interest, tax/insurance and mo. expenses) and the interest-only payment on a 30-year, 6% loan if the home's selling price is $330,000 and the down payment is 15%. *(Local annual property taxes are estimated at $5,900, property insurance at $500, mortgage insurance at $1,200, and mo. expenses — e.g., homeowner's assn dues plus utilities — at $150.)*

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter term in years	30 Term	30.00
Enter annual interest	6 Int	6.00
Enter sales price	330 000 Price	330,000.00
Enter down payment %	15 Dn Pmt	15.00
Find dollar $	Dn Pmt	49,500.00
Enter property tax	5900 Tax	5,900.00
Enter property insurance	500 Ins	500.00
Enter mortgage insurance	1200 Shift Ins	1,200.00
Enter monthly expenses	150 Exp	150.00
Find loan amount	Loan Amt	280,500.00

(Cont'd)

(Cont'd)

STEPS	KEYSTROKES		DISPLAY
Find P&I payment	Pmt	"run"	1,681.74
Find PITI payment	Pmt		2,315.07
Find total payment (PITI plus monthly expenses)	Pmt		2,465.07
Find interest-only payment	Pmt		1,402.50

Estimated Income Tax Savings and "After-Tax" Payment

Important Note: This example estimates the annual tax savings (including property tax and mortgage interest). It is important to inform your clients to consult a tax advisor for an accurate income tax deduction computation for their particular tax situation.

Buyers in a 28% income tax bracket are looking to finance a $150,000 mortgage for 30 years at 8% annual interest. If they will be paying approximately $1,500 in annual property taxes and $250 in annual property insurance, find their *estimated* annual tax savings (or mortgage interest/property tax savings) and "after-tax" monthly payment.

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		0.00
Enter term in years	3 0 Term		30.00
Enter annual interest	8 Int		8.00
Enter annual property tax	1 5 0 0 Tax		1,500.00
Enter annual property ins.	2 5 0 Ins		250.00
Enter loan amount	1 5 0 000 Loan Amt		150,000.00
Find P&I payment	Pmt	"run"	1,100.65
Find PITI payment	Pmt		1,246.48
Enter tax bracket	2 8 Shift Pmt		28.00
Find annual income tax savings	Pmt		3,767.32
Find monthly tax savings	Pmt		313.94
Find "after-tax" payment	Pmt		932.54

— DO NOT CLEAR CALCULATOR —

If the above loan starts in July, find the "after-tax" payment.

STEPS	KEYSTROKES	DISPLAY
Set Mo. 1 Offset to July	7 Shift 000	7.00
Enter tax bracket	2 8 Shift Pmt	28.00
Find annual tax savings	Pmt	1,887.16
Find monthly tax savings	Pmt	314.53
Find "after-tax" payment	Pmt	931.95
Return Mo. Offset to Jan.	1 Shift 000	1.00

Rent vs. Buy

If your client is currently renting a home for $1,250/month, what is the comparable home sales price and loan amount that he or she could afford? What is the estimated annual and monthly income tax savings, if they were to finance this mortgage? The current rate is 7.5% on a 30-term Fixed-Rate Mortgage, and your client can afford to put 10% down. You estimate local taxes at 1.25% and property insurance at 0.35%. Your client is in the 28% tax bracket.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter interest rate	7 • 5 Int	**7.50**
Enter term	3 0 Term	**30.00**
Enter down payment	1 0 DnPmt	**10.00**
Enter tax bracket	2 8 Shift +	**28.00**
Enter property tax rate	1 • 2 5 Tax	**1.25**
Enter insurance rate	• 3 5 Ins	**0.35**
Enter current monthly rent to find comparable home price	1 2 5 0 Shift Price	**216,781.98**
Find comparable loan amount	Price	**195,103.78**
Find PITI payment	Price	**1,653.24**
Find annual tax savings	Price	**4,838.84**
Find monthly tax savings	Price	**403.24**
Re-display tax bracket	Price	**28.00**
Re-display monthly rent	Price	**1,250.00**

Adjustable Rate Mortgages

Using the ARM key, you can quickly find the "adjusted" (increasing or decreasing) payments for future years on fully and partially amortized Adjustable Rate Mortgages. Here are some notes on Solving ARM loans using this calculator:

1. You solve the initial ARM payment just as you would for any standard, fixed-rate loan — the ARM function is only used for "adjusted" periods.
2. The "split" **Interest** : **Term Adjustment** entry for ARMs should be entered on an annual basis (although you can also enter a 6-month adjustment term as .5). This value is permanently stored in memory.
3. After performing an ARM calculation, your permanently stored values for Term and Interest will be changed, since performing an ARM alters these values.
4. To calculate a "decreasing ARM," enter the two ARM parameters, but press the Shift key before pressing ARM.
5. The calculator includes a "lifetime cap" (i.e., the maximum amount the interest rate may increase over the life of a loan). Prior to setting your ARM parameters, key in the maximum lifetime interest increase followed by Shift %. This permanently sets the lifetime cap. To restore the cap to "0" enter 0 Shift %.

ARM Payment — *Worst-Case Scenario*

Find the initial monthly payment on a 30-year, $176,000 mortgage at 8.25% annual interest rate, and then find the second and third year's "worst-case" adjusted payments if this ARM loan increases 0.5% at the end of each year. Then, find the remaining loan balance, current interest rate and term.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter loan amount	1 7 6 000 Loan Amt	**176,000.00**
Enter term in years	3 0 Term	**30.00**
Enter annual interest	8 • 2 5 Int	**8.25**
Find initial monthly payment (1st year)	Pmt	**"run" 1,322.23**
Enter ARM parameters	• 5 ⋮ 1 ARM	**0.50 - 1.00**
Find 1st adjusted (2nd year) ARM payment	ARM	**1 ARM 1,383.53**
Find 2nd adjusted (3rd year) ARM payment	ARM	**2 ARM 1,444.72***
Find principal at start of 3rd year	Rcl Loan Amt	**173,221.91**
Recall current interest rate	Rcl Int	**9.25**
Recall remaining term	Rcl Term	**28.00**

**Note: You may continue pressing ARM to find the 4th, 5th year, etc. increasing ARM payments. The display will show the payment number to the left.*

ARM Payment — *Using Lifetime Cap*

Using the previous mortgage, add a lifetime cap of 4% and find the adjusted payments through year ten. You will need to re-enter the loan amount, term and interest.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	1 7 6 000 Loan Amt	176,000.00
Enter term in years	3 0 Term	30.00
Enter annual interest	8 • 2 5 Int	8.25
Find monthly payment (1st year)	Pmt	"run" 1,322.23
Enter interest cap	4 Shift %	CAP ARM 4.00%
Enter ARM parameters	• 5 : 1 ARM	0.50 - 1.00
Find 1st adjusted (2nd year) ARM payment	ARM	1 ARM 1,383.53
Find 2nd adjusted (3rd year) ARM payment	ARM	2 ARM 1,444.72
Find 3rd adjusted (4th year) ARM payment	ARM	3 ARM 1,505.71
Find 4th adjusted (5th year) ARM payment	ARM	4 ARM 1,566.43
Find 5th adjusted (6th year) ARM payment	ARM	5 ARM 1,626.81
Find 6th adjusted (7th year) ARM payment	ARM	6 ARM 1,686.78
Find 7th adjusted (8th year) ARM payment	ARM	7 ARM 1,746.26
Find 8th adjusted (9th year) ARM payment*	ARM	8 ARM 1,805.17
Find 9th adjusted (10th year) ARM payment*	ARM	9 ARM 1,805.17
Find principal at start of 10th year	Rcl Loan Amt	163,155.23
Recall current interest rate	Rcl Int	12.25
Recall remaining term	Rcl Term	21.00
Reset cap to zero	0 Shift %	CAP ARM 0.00%

**Note that the payment for 8th and 9th adjustments (corresponding to the 9th and 10th years) is the same because the lifetime cap was reached on the 8th adjustment. An "M" for "maximum" will appear at the bottom of the display once the Cap is reached. Be sure to set the Cap back to "0" by pressing 0 Shift % before starting a new ARM problem.*

Decreasing ARM Payment

Calculate the initial monthly payment on a 30-year, $250,000 ARM loan at 5% interest, and then find the second and third years' adjusted payments if the loan's interest rate decreases 1% at the end of each year.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	2 5 0 000 Loan Amt	250,000.00
Enter term in years	3 0 Term	30.00
Enter annual interest	5 Int	5.00
Find initial monthly payment	Pmt	"run" 1,342.05
Enter ARM parameters	1 : 1 Shift ARM	-1.00 - 1.00
Find 1st lower ARM payment*	ARM	1 ARM 1,197.01
Find 2nd lower ARM payment*	ARM	2 ARM 1,064.20

**For second and third year payments.*

Increasing and Decreasing ARM Payment

Find the ARM payments for a $300,000, 30-year ARM loan that starts out at 5% but increases 1% after six months and then decreases 1.5% after an additional 12 months.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	3 0 0 000 Loan Amt	300,000.00
Enter term in years	3 0 Term	30.00
Enter annual interest	5 Int	5.00
Find initial monthly payment	Pmt	"run" 1,610.46
Enter 1st ARM adjustment	1 : • 5 ARM	1.00 - 0.50
Find higher ARM payment	ARM	1 ARM 1,796.41
Enter 2nd ARM adjustment	1 • 5 : 1 Shift ARM	-1.50 - 1.00
Find lower ARM payment	ARM	"run" 1 ARM 1,527.15

Amortization and Remaining Balance

The amortization function is quick and simple. It allows you to find total interest, principal, and remaining balance for an entire loan, for an individual payment or individual year, or any range of payments or range of years, for fully or partially amortized loans. It also lets you quickly compute the mortgage interest deduction (as an estimate) for your clients.

Notes on Amortization

1. When you enter a range of payments using the **.** key, you can find all three possible outputs — Interest, Principal, and Remaining Balance — without having to re-enter the range each time. Simply keep pressing the **Amort** key to find the values.
2. You can also find Remaining Balance using the **Shift** **Amort** key by specifying a year or range of years, period or range of periods. For example, to find the Remaining Balance after the 10th *year*, press **1** **0** **Shift** **Amort**; to find the Remaining Balance after the 10th *period*, press **1** **0** **Shift** **←** *(periodic)* **Shift** **Amort**.
3. Entered ranges are inclusive, so that a range of 1 to 5 would include both year 1 and year 5.
4. Entering a numerical value or performing a math operation on the keyboard will alter the values (including the default settings) for range of payments calculations. It is, therefore, best to specify a range of payments or an individual payment before you calculate any of the above.
5. In some cases, it is the practice to include a final, regular P&I payment with the "balloon payment." This calculator will not include that in the internal calculation of remaining balance; it will only display the actual principal balance remaining.

(Cont'd)

(Cont'd)

6. If the first payment of a loan begins in a month other than January, you can use the Month Offset function. The default for this setting is 1 (for January). To change the start month from January, enter the month number (e.g., 2 for February), then the **Shift** and **000** keys. This allows you to calculate the correct number of periods in the amortization range. As another example, if the first payment of a loan begins in April, the value stored in the month offset would be 4 (press 4 **Shift** **000**). If requesting amortization values for year 1 (press 1 **Amort**), the amortization of periods 1-9 would be displayed. Year 2 (press 2 **Amort**) would display values for periods 10-21. Turning your calculator off and back on returns the Month Offset to 1 (January).

   *Note: If you have changed your Month Offset, be sure to return it to 1 (i.e., 1 **Shift** **000**) before proceeding to the next problem.*

7. A useful new feature is that your calculator will also display an estimated Mortgage Interest Tax Deduction at the end of the amortization value list (after remaining balance is displayed), if a tax bracket is also entered via **Shift** **+** *(Tax Brkt%).*

   Note: If a tax bracket % is not entered, the calculator will use the default of 28%, displayed upon **Rcl** **+**.

8. Your calculator automatically advances to the **Next** Amortization Range or Period after the initial sequence is complete, upon repeated presses of **Amort**. *This saves you from entering the next range or period each time.*

Total Principal and Interest for a 30-Year Loan

How much total interest will you pay on a $300,000 loan at 7.5% interest over 30 years? What is the total principal and interest paid?

STEPS	KEYSTROKES	DISPLAY
Clear calculator	**On/C** **On/C**	**0.00**
Enter loan amount	3 0 0 **000** **Loan Amt**	**300,000.00**
Enter interest	7 • 5 **Int**	**7.50**
Enter term	3 0 **Term**	**30.00**
Find monthly P&I payment	**Pmt**	**"run" 2,097.64**
Find total # of payments	**Amort**	**"run" 1-360**
Find total interest paid	**Amort**	**455,151.67**
Find total principal paid	**Amort**	**300,000.00**
Find total principal/interest	**Amort**	**755,151.67**

Amortization List for Individual Year(s) — *Using "Next" Feature*

How much total interest and principal will you pay on a 30-year, $90,000 loan at 8% interest during the first year? The second year? Third year, etc.? First, find monthly payment to "set-up" this loan. The calculator will automatically advance to the next year upon subsequent presses of **Amort**.

Note: The mortgage interest tax deduction is based on the default tax bracket of 28% unless you have changed it via **Shift** **+**.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter loan amount	9 0 000 Loan Amt	**90,000.00**
Enter interest	8 Int	**8.00**
Enter term	3 0 Term	**30.00**
Find monthly P&I payment	Pmt	**"run" 660.39**
Enter Year 1	1 Amort	**"run" 1-12**
Find total interest in Year 1	Amort	**7,172.83**
Find total principal in Year 1	Amort	**751.83**
Find prin./interest in Year 1	Amort	**7,924.66**
Find remaining balance	Amort	**89,248.17**
Find remaining term	Amort	**29.00**
Find mortgage interest tax deduction in Year 1	Amort	**2,008.39**
Display next year (Year 2)	Amort	**"run" 13-24**
Find total interest in Year 2	Amort	**7,110.43**
Find total principal in Year 2	Amort	**814.23**
Find principal/interest in Year 2	Amort	**7,924.66**
Find remaining balance	Amort	**88,433.94**
Find remaining term	Amort	**28.00**
Find mortgage interest tax deduction in Year 2	Amort	**1,990.92**
Display next year (Year 3)	Amort	**"run" 25-36**

(etc.—sequence repeats for each year)

Amortization List for Individual Year(s) — *Using Month Offset*

The first payment of a loan begins in May. How much total interest and principal will you pay on a 30-year, $90,000 loan at 8% interest during the first year? The second year? Third year, etc.? (First find monthly payment to "set-up" this loan.)

Note: The mortgage interest tax deduction is based on the default tax bracket of 28% unless you have changed it via Shift + *. Calculator will automatically advance to the next year upon subsequent presses of* Amort.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Set Month Offset to May	5 Shift 000	**5.00**
Enter loan amount	9 0 000 Loan Amt	**90,000.00**
Enter interest	8 Int	**8.00**
Enter term	3 0 Term	**30.00**
Find monthly P&I payment	Pmt	**"run" 660.39**
Enter Year 1	1 Amort	**"run" 1-8**
Find total interest in Year 1	Amort	**4,788.58**
Find total principal in Year 1	Amort	**494.53**
Find principal/interest in Year 1	Amort	**5,283.10***
Find remaining balance	Amort	**89,505.47**
Find remaining term	Amort	**29.33**
Find mortgage interest tax deduction in Year 1	Amort	**1,340.80**
Display next year (Year 2)	Amort	**"run" 9-20**
(etc.—sequence repeats for each year)		
Return Month Offset to 1**	1 Shift 000	**1.00**

**Note*: Payments are rounded to the nearest whole cent; therefore, the penny difference.*

***Note*: Remember to reset Month Offset to 1. Check this setting by pressing* Rcl 000.

Amortization List for Individual Payment(s)

For a $175,000 loan at 6.85% interest for 30 years, find out how much interest and how much principal you'll pay in the first and second payments.

Note: Use the Shift ← keys to label the payments.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	1 7 5 000 Loan Amt	175,000.00
Enter interest	6 • 8 5 Int	6.85
Enter term	3 0 Term	30.00
Find monthly payment	Pmt	"run" 1,146.70*
Enter Payment #1	1 Shift ← Amort	"run" 1-1
Find interest in Payment #1	Amort	998.96
Find principal in Payment #1	Amort	147.75
Find principal/interest in Payment #1	Amort	1,146.70
Find remaining balance in Payment #1	Amort	174,852.25
Find remaining term in Payment #1	Amort	29.92
Find mortgage interest deduction in Payment #1	Amort	279.71
Display Payment #2	Amort	"run" 2-2

(etc.—sequence repeats for each payment)

— DO NOT CLEAR CALCULATOR —

For the same loan, find the amount of principal and interest paid in the 36th payment. Also, find the total payment, remaining balance and remaining term.

STEPS	KEYSTROKES	DISPLAY
Enter Payment #36	3 6 Shift ← Amort	"run" 36-36
Find interest in Payment #36	Amort	966.39
Find principal in Payment #36	Amort	180.32
Find principal/interest Payment #36	Amort	1,146.70*
Find remaining balance	Amort	169,113.79
Find remaining term	Amort	27.00

**Note: Payments are rounded to the nearest whole cent; therefore, the penny difference.*

Amortization List for a Range of Payments or Years

For a $225,000, 30-year loan at 7.4% interest, find out how much interest and principal you'll pay in payments 1-9, and then for years 1-10.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter loan amount	2 2 5 000 Loan Amt	**225,000.00**
Enter interest	7 • 4 Int	**7.40**
Enter term	3 0 Term	**30.00**
Find monthly P&I payment	Pmt	**"run" 1,557.85**
Enter Payments #1-9	1 : 9 Shift ← Amort	**"run" 1-9**
Find interest	Amort	**12,449.13**
Find principal	Amort	**1,571.56**
Total principal and interest	Amort	**14,020.69**
Find remaining balance	Amort	**223,428.44**
Find remaining term	Amort	**29.25**
Find mortgage interest deduction for Payments #1-9	Amort	**3,485.76**
Enter Years #1-10	1 : 1 0 Amort	**"run" 1-120**
Find interest	Amort	**156,798.68**
Find principal	Amort	**30,143.87**
Total principal and interest	Amort	**186,942.55**
Find remaining balance	Amort	**194,856.13**
Find remaining term	Amort	**20.00**
Find mortgage interest deduction for Years #1-10	Amort	**43,903.63**

APR and Total Finance Charges

Calculating the Annual Percentage Rate (APR) and Total Finance Charges (TFC) is performed in two steps: (1) you set up the loan just like any other problem (that is, enter three known variables and solve for the fourth) and (2) combine points and fees and press Shift Int (APR) to solve APR. If you continue to press Int, the calculator will also display the total finance charges, and a third press will display total finance charges plus principal (total cost of loan).

If mortgage insurance is entered, as seen in the second example, your calculator will include that expense into APR and total finance charges, as well as calculate the periodic mortgage insurance dollar amount and PIMI (Principal, Interest, Mortgage Insurance) payment.

Note: APR for non-real estate loans (such as for autos and boats) that compound interest based upon 365 days per year cannot not be solved using this function, as calculations are based on 360 days per year.

Finding APR, Total Finance Charges (Excluding Mortgage Insurance)

You are financing a mortgage of $250,000 for 30 years at a nominal or quoted rate of 8% interest. The cost of getting the loan is quoted as 1.5 points and $550 in fees. Mortgage insurance is not required. What is the APR and total finance charges when these costs are included?

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	2 5 0 000 Loan Amt	250,000.00
Enter interest	8 Int	8.00
Enter term	3 0 Term	30.00
Find monthly P&I payment	Pmt	"run" 1,834.41
Find Loan Costs:		
Recall loan amount	Rcl Loan Amt	250,000.00
Find point cost	× 1 • 5 % =	3,750.00
Add fees and find total	+ 5 5 0 =	4,300.00
Find APR*	Shift Int	"run" 8.18
Find total finance charges	Int	414,688.12
Find amount financed	Int	245,700.00
Find total finance charges plus amount financed	Int	660,388.12

**Note: Because APR is an interest calculation, it may take several seconds to calculate. APR includes mortgage insurance, if entered. Total finance charges include mortgage insurance over the life of the loan, to present a worst-case scenario; however, most people can eliminate MI once a certain LTV is met.*

Prepaid/Odd-Days Interest and APR

Find the monthly payment on a $100,000 loan at 8.25% annual interest and 30-year term. Then, find the amount of odd-days interest, or "prepaid" interest due, if the escrow closes on 7/21/03 and the first payment is due 8/1/03.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Enter loan amount	1 0 0 000 Loan Amt	100,000.00
Enter interest	8 • 2 5 Int	8.25
Enter term	3 0 Term	30.00
Find monthly P&I payment	Pmt	"run" 751.27
Find days between escrow closing and date of 1st payment	8 . 1 . 0 3 − 7 . 2 1 . 0 3 =	11.00
Find the prepaid interest due at closing	Shift .	252.08*

**Note: This is based on a 360-day year, as most banks use this method for computing prepaid interest.*

— DO NOT CLEAR CALCULATOR —

Now, without clearing the calculator, add the prepaid interest to the loan's points and fees if they are equal to 1.5% and $500, respectively. Then find the Annual Percentage Rate (APR), based on these closing costs.

STEPS	KEYSTROKES	DISPLAY
Store the prepaid interest in memory	M+	252.08
Find Loan Costs:		
Recall loan amount	Rcl Loan Amt	100,000.00
Find point cost	× 1 • 5 % =	1,500.00
Add fees	+ 5 0 0 =	2,000.00
Add prepaid interest stored in memory	+ Rcl M+ =	2,252.08
Find APR for this loan	Shift Int	"run" 8.50
Clear All	Shift ×	"All Cleared" 0.00

Balloon Payment/Remaining Balance Needed to Pay Off a Loan

You're looking at a new home with the following financing available: Loan amount $225,000 at 6.75% amortized over 30 years but due and payable after 10 years. What is the balloon payment (remaining balance) after 10 years?

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter the loan amount	2 2 5 000 Loan Amt	**225,000.00**
Enter interest	6 • 7 5 Int	**6.75**
Enter term	3 0 Term	**30.00**
Find monthly payment	Pmt	**"run" 1,459.35**
Find balloon/remaining balance after 10 years	1 0 Shift Amort	**"run" 191,927.25**

Bi-Weekly Loans

Your calculator includes a Bi-Weekly loan function (Shift Term) that allows you to convert established, fully amortized monthly loans into Bi-Weeklies (in which one-half the monthly payment is made every two weeks). Because you make two extra half-payments per year (i.e., 26 Bi-Weekly payments is like making 13 payments/year), these kinds of loans can amount to large interest savings and a substantial reduction in the time it takes to pay them off.

You begin these problems by setting up the initial monthly loan and then pressing Shift Term. The first press of Term displays the Bi-Weekly term, the second press shows the total interest *savings* over the entire loan, a third press calculates the total interest paid, a fourth press shows the total principal paid, and a fifth press shows the total principal and interest. Press the Pmt key to find the Bi-Weekly payment.

Bi-Weekly Term Reduction and Payment

Find the monthly P&I payment on a 30-year, $275,000 mortgage at 5.88% annual interest. Then convert it to a Bi-Weekly and find out how many years it will take to pay off this loan, the total interest savings, the total interest and principal paid (as a comparison to the regular loan), and the Bi-Weekly payment.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter loan amount	2 7 5 000 Loan Amt	**275,000.00**
Enter term in years	3 0 Term	**30.00**
Enter annual interest	5 • 8 8 Int	**5.88**
Find monthly P&I payment	Pmt	**"run" 1,627.61**
Display amortization period	Amort	**1-360**
Find total interest paid	Amort	**310,938.79**
Re-display total principal	Amort	**275,000.00**
Find total interest/principal paid	Amort	**585,938.79**

Now Solve for the Bi-Weekly Loan and Compare Interest Savings and Total Interest/Principal Paid:

Find Bi-Weekly term	Shift Term	**"run" 24.60**
Find total interest savings	Term	**65,430.46***
Find total interest paid	Term	**245,508.33**
Find total principal	Term	**275,000.00**
Find total principal and interest	Term	**520,508.33**
Find Bi-Weekly P&I payment	Pmt	**813.80**
Clear calculator**	On/C On/C	**0.00**

**Notice you save a significant amount (over $65K in this example) with a bi-weekly.*

***Note: Return to monthly payment mode by pressing On/C twice.*

Trust Deeds and Discounted Notes

Your calculator easily handles trust deed purchase price and yield problems. Two things to remember are: (1) when entering or solving for "yield" or "rate of return," use the Int key, and (2) when entering or solving for "purchase price" or "present value," use the Loan Amt key.

Purchase Price of a Note — *Fully Amortized*

The mortgage you are thinking about buying has the following terms and conditions: 15 years remaining, $100 per month incoming payments, and you want a 25% yield or return on your investment. In this case you are paying for the income stream — the incoming payments — and not the future value.

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		**0.00**
Enter desired yield	2 5 Int		**25.00**
Enter term	1 5 Term		**15.00**
Enter payment amount	1 0 0 Pmt		**100.00**
Find purchase price	Loan Amt	**"run"**	**4,682.68**

— DO NOT CLEAR CALCULATOR —

What if you want a 20% yield? Leave all of the above data and re-enter the 20% interest over the old rate, then re-calculate the loan amount.

STEPS	KEYSTROKES		DISPLAY
Enter your new desired rate of return	2 0 Int		**20.00**
Find purchase price	Loan Amt	**"run"**	**5,693.80**

Finding the Yield on a Discounted Note

An individual wants to sell you a note under the following terms: 60 months remaining in the term, a face amount when due of $7,500, 10% interest-only payments of $62.50 (incoming). He says he will sell this note to you for $6,500 if you buy today. If you buy it, what will be the yield on your investment?

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		**0.00**
Enter future value of note when due	7 5 0 0 Shift Loan Amt		**7,500.00**
Enter purchase price	6 5 0 0 Loan Amt		**6,500.00**
Enter remaining term*	6 0 Shift ← Term		**60.00**
Enter payment amount	6 2 • 5 0 Pmt		**62.50**
Find your yield	Int	**"run"**	**13.70**

**Note: Pressing Shift ← identifies your entry as a periodic value.*

— DO NOT CLEAR CALCULATOR —

What should you pay for this trust deed if you want an 18% yield on your investment?

STEPS	KEYSTROKES	DISPLAY
Enter your desired yield	1 8 Int	18.00
Find purchase price	Loan Amt	"run" 5,530.99

Finding the Value and Discount of a Trust Deed

Determine the value and discount required for a $75,000 mortgage, payable at $937.50 per month, bearing interest at 11% per year, due in seven years.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	0.00
Store loan amt in Memory	7 5 000 Loan Amt M+	M 75,000.00
Enter monthly payment	9 3 7 • 5 Pmt	937.50
Enter annual term	7 Term	7.00
Enter annual interest rate	1 1 Int	11.00
Compute remaining balance	Shift Loan Amt	43,576.27

— DO NOT CLEAR CALCULATOR —

What should you pay for this trust deed if you want a 17% yield on your investment?

STEPS	KEYSTROKES	DISPLAY
Enter your desired yield	1 7 Int	17.00
Compute value of mortgage	Loan Amt	59,243.35
Subtract from Memory	Shift M+	59,243.35
Compute discount (recall Memory)	Rcl M+	M 15,756.65
Clear Memory*	Rcl Rcl	15,756.65

**Note: Pressing Rcl Rcl or turning the calculator Off will clear the value stored in Memory.*

BUYER QUALIFYING

The Qualifying keys were designed specifically for mortgage lenders/brokers, for doing instant pre-qualifications on the phone or in front of clients. Real estate agents/brokers can also quickly pre-qualify clients so they can show them homes in their affordable price range.

The calculator gives you three types of qualifying answers: (1) Loan Amount available given buyer's income and debt, (2) Income required given loan amount (or price/down payment) and (3) Actual Ratios given both income/debt and property data. Here are some notes on qualifying using your calculator:

1. The Qual 1 and Qual 2 keys are multi-function "smart" keys. In other words, they deliver a variety of answers based on what is input, and what is not. The calculator will figure out which qualifying solutions should be displayed, based on the qualifying variables you've input.
2. You can use both Qualifying keys Qual 1 and Qual 2 to demonstrate various loan qualifying comparisons or scenarios (e.g., conventional vs. FHA loans). Simply store different income and debt qualifying ratios. For example, the Qual 1 key defaults to 28% Income and 36% Debt, for conventional loan qualifying. The Qual 2 key defaults to 29% Income and 41% Debt. However, you may store *any ratios you want* into these keys, or change these ratios at any time.
3. A calculated Qualifying Loan Amount is automatically stored in the Loan Amount Loan Amt register, replacing any existing Loan Amount value. This lets you instantly proceed to monthly payment calculations, etc.
4. When calculating Qualifying Loan Amount (based on entered buyer's data, term, interest and stored qualifying ratios), successive presses of the Qual 1 or Qual 2 keys give the following results:
   - the first press of Qual 1 or Qual 2 will display your stored ratios;
   - the second press in succession will display the "restricted," maximum qualifying loan amount (used in loan approval);
   - the third press in succession will show the buyer's actual income and debt ratios;
   - the fourth press will display the higher, "unrestricted" qualifying loan amount; and
   - the last press will display the allowable monthly debt.

   Note: You can set your Qualifying Ratios to display first or last via the Preference Settings. See ***page 20****.*

5. When calculating Annual Income Required (based on entered loan amount or sales price, term, interest and stored qualifying ratios), the first press of [Qual 1] or [Qual 2] will display your stored ratios, the second press in succession will display the Annual Income Required, and the third press in succession will show the Allowable Monthly Debt.
6. When calculating buyer's Actual Ratios based on entered borrower data (i.e., income and debt) and property data (i.e., loan amount, sales price, term, interest), the first press of [Qual 1] or [Qual 2] will display the stored qualifying ratios, and the second press will calculate the buyer's actual ratios.
7. You can use the [Exp] *Expense*, [Tax], [Ins], and [Shift] [Ins] *Mtg Ins* keys as optional variables affecting buyer qualifying (and PITI payments). Tax and Insurance rates are calculated from the Sales Price. Mortgage Insurance is calculated from the Loan Amount.

QUALIFYING EXAMPLES

Most of the examples in this section will be based on the default Income and Debt Ratios of 28% and 36%, respectively, which are stored in the [Qual 1] key.

Recalling Income/Debt Qualifying Ratios

Recall stored 28%-36% and 29%-41%ratios:

STEPS	KEYSTROKES	DISPLAY
Clear calculator	[On/C] [On/C]	**0.00**
Recall qualifying ratios 1	[Rcl] [Qual 1]	**28.00-36.00**
Recall qualifying ratios 2	[Rcl] [Qual 2]	**29.00-41.00**

Storing New Income/Debt Qualifying Ratios

Enter and permanently store new qualifying ratios of 30% for Income and 38% for Debt in [Qual 1]:

STEPS	KEYSTROKES	DISPLAY
Clear calculator	[On/C] [On/C]	**0.00**
Set qualifying ratios	[3] [0] [.] [3] [8] [Qual 1]	**30.00-38.00**
Return ratios to 28:36*	[2] [8] [.] [3] [6] [Qual 1]	**28.00-36.00**

**Note: Your ratios will be permanently stored, and will remain even after your calculator is turned off. However, if you have changed the Qualifying Ratios from the default of 28:36 (Qual 1) or 29:41 (Qual 2), you can re-enter these ratios at any time.*

Finding Qualifying Loan Amount and Sales Price (Simple Example Excluding Tax/Insurance)

Given an interest rate of 7.5%, a term of 30 years, and the stored Qual 1 28%:36% qualifying ratios, for what size loan and what sales price can a buyer qualify for if he or she makes $75,000 annually and has $500 in long-term monthly debt? The buyer plans to put $35,000 down. Also, what is the monthly (P&I) payment? *(Based on no Tax and Insurance*)*

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		**0.00**
Enter term in years	3 0 Term		**30.00**
Enter annual interest	7 • 5 Int		**7.50**
Clear tax rate*	0 Tax		**0.00**
Clear insurance rate*	0 Ins		**0.00**
Clear mortgage insurance rate*	0 Shift Ins		**0.00**
Enter annual income	7 5 000 Inc		**75,000.00**
Enter monthly debt	5 0 0 Debt		**500.00**
Enter down payment	3 5 000 DnPmt		**35,000.00**
Display qualifying ratios	Qual 1		**28.00-36.00**
Find qualifying loan amount	Qual 1	**"run"**	**250,280.85**
Find price	Price		**285,280.85**
Find monthly P&I payment	Pmt		**1,750.00**

**Note: Tax and Insurance will need to be cleared if you're continuing from a previous example where rates were stored.*

— DO NOT CLEAR CALCULATOR —

Re-qualify this buyer assuming $200 per month in additional debt.

STEPS	KEYSTROKES		DISPLAY
Enter new monthly debt	7 0 0 Debt		**700.00**
Display qualifying ratios	Qual 1		**28.00-36.00**
Find lower qualifying loan amount	Qual 1	**"run"**	**221,677.32**
Find lower price	Price		**256,677.32**
Find monthly P&I payment	Pmt		**1,550.00**

Qualifying Loan Amount and Sales Price (Complete Example Including Down Payment, Tax/Insurance, Monthly Association Dues)

The same buyers as in the previous example (who make $75,000 annually and have $500 in long-term monthly debt) wish to buy a lower-priced home and can only put $5,000 down. If you include estimated annual property taxes and insurance of 1.5% and 0.25%, respectively, a mortgage insurance rate of 0.6% and monthly homeowner's association dues of $50, for what loan amount can they now qualify? What sales price can they afford? What's their total payment? *(Again, use the previously stored 7.5% interest, 30-year term, and qualifying ratios of 28%:36%; if you've cleared or changed these values, please re-enter them.)*

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		**0.00**
Enter annual income	7 5 000 Inc		**75,000.00**
Enter monthly debt	5 0 0 Debt		**500.00**
Enter down payment	5 000 DnPmt		**5,000.00**
Set annual property tax rate	1 • 5 Tax		**1.50**
Set annual property insurance rate	• 2 5 Ins		**0.25**
Set annual mortgage insurance rate	• 6 Shift Ins		**0.60**
Enter homeowner's dues	5 0 Exp		**50.00**
Recall interest*	Rcl Int		**7.50**
Recall term*	Rcl Term		**30.00**
Display qualifying ratios	Qual 1		**28.00-36.00**
Find qualifying loan amount	Qual 1	**"run"**	**189,119.31**
Find price	Price		**194,119.31**

— DO NOT CLEAR CALCULATOR —

Now find the monthly P&I payment, PITI payment, total payment, and interest-only payment:

STEPS	KEYSTROKES		DISPLAY
Find P&I payment	Pmt	**"run"**	**1,322.35**
Find PITI payment	Pmt		**1,700.00**
Find total payment	Pmt		**1,750.00**
Find interest-only payment	Pmt		**1,182.00**

**If you're not continuing from the previous problem, you'll need to re-enter interest and term.*

"Restricted" Qualifying

Buyers who make $68,000 annually and have $750 in long-term monthly debt wish to buy a home offered at $175,000. They can only afford $5,000 for the down payment. For what maximum loan amount can they qualify? *(Use previously stored 7.5% interest, 30-year term, Tax/Ins./Mtg. Ins. rates of 1.5%, .25% and 0.6%, respectively, and qualifying ratios of 28%:36%. Re-enter 0.6% mortgage insurance rate, $50 assn. dues and $5,000 down. Note: If these values aren't stored, you'll need to re-enter them.)*

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		0.00
Recall interest*	Rcl Int		7.50
Recall term*	Rcl Term		30.00
Recall annual prop. tax %*	Rcl Tax		1.50
Recall annual prop. ins. %*	Rcl Ins		0.25
Re-enter annual MI rate	• 6 Shift Ins		0.60
Enter homeowner's dues	5 0 Exp		50.00
Enter down payment	5 000 DnPmt		5,000.00
Enter annual income	6 8 000 Inc		68,000.00
Enter monthly debt	7 5 0 Debt		750.00
Display qualifying ratios	Qual I		28.00-36.00
Find "restricted" qualifying loan amount	Qual I	"run"	137,725.41

— DO NOT CLEAR CALCULATOR —

**Note: If you're not continuing from the previous problem, you'll need to re-enter interest, term, and in this case, property tax and insurance.*

"Unrestricted" Qualifying

The amount calculated in the previous example is the loan they may qualify for, based on current income and debt and the standard 28%-36% qualifying ratios. What are the buyer's actual income and debt ratios? What does the "unrestricted" loan amount calculate to, and which side is it based on (i.e., buyer's income or debt)? What is the buyer's maximum allowable debt?

STEPS	KEYSTROKES		DISPLAY
Find actual ratios	Qual I	"run"	22.76-36.00
Find "unrestricted" loan amount	Qual I	UNR	170,870.75 LA INC*
Find allowable debt	Qual I		453.33**

Note: The "INC" tells you this unrestricted Qualifying Loan Amount is based on the buyer's Income Ratio — therefore, the restricted Qualifying Loan Amount is based on the buyer's Debt Ratio. This means that if they pay off their monthly debt to $453/mo. or lower (as seen in "allowable debt" calculation), they may qualify for a mortgage of approx. $170,000 or more and that $175,000 home (putting approx. $4-$5K down).*

Qualifying Comparison (Comparing 2 Different Loans or Ratios at Once)

Given a buyer's annual income of $60,000, $500 in long-term monthly debt, estimated monthly homeowner's association dues of $50, an interest rate of 6.25% and term of 30 years, what loan amounts can they qualify for based on both 28%:36% and higher 29%:41% ratios? Also, find the corresponding total monthly payment for each. Estimate property tax/insurance rates of 1.25% and .3%, respectively, and a mortgage insurance rate of .45%.

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		0.00
Enter annual income	6 0 000 Inc		60,000.00
Enter monthly debt	5 0 0 Debt		500.00
Enter monthly association dues	5 0 Exp		50.00
Enter interest	6 • 2 5 Int		6.25
Enter term	3 0 Term		30.00
Enter property tax rate	1 • 2 5 Tax		1.25
Enter property insurance rate	• 3 Ins		0.30
Enter mortgage insurance rate	• 4 5 Shift Ins		0.45
Display Qual 1 stored ratios	Qual 1		28.00-36.00
Find Qual 1 qualifying loan	Qual 1	"run"	159,768.12
Find P&I payment	Pmt		983.72
Find PITI payment	Pmt		1,250.00
Find total payment	Pmt		1,300.00
Find interest-only payment	Pmt		832.13

— DO NOT CLEAR CALCULATOR —

STEPS	KEYSTROKES		DISPLAY
Display Qual 2 stored ratios	Qual 2		29.00-41.00
Find Qual 2 qualifying loan	Qual 2	"run"	178,940.29*
Find P&I payment	Pmt		1,101.77
Find PITI payment	Pmt		1,400.00
Find total payment	Pmt		1,450.00
Find interest-only pmt	Pmt		931.98

**Notice that, of course, the qualifying loan amount is significantly higher using Qual 2 ratios.*

Finding Income Required and Allowable Monthly Debt

Using the stored Qual 1 28%:36% ratios, how much income would a buyer need to finance a $250,000 home if they put 20% down? What is the maximum allowable debt? What is the dollar down payment and loan amount? What is the monthly payment? Use 6.75% interest for 30 years. Estimate property tax/insurance rates of 1.5% and 0.25%, respectively. Clear mortgage insurance rate to zero, as they are putting 20% down.

STEPS	KEYSTROKES	DISPLAY
Clear calculator	On/C On/C	**0.00**
Enter annual interest	6 • 7 5 Int	**6.75**
Enter term in years	3 0 Term	**30.00**
Enter tax rate	1 • 5 Tax	**1.50**
Enter insurance rate	• 2 5 Ins	**0.25**
Delete mortgage insurance rate	0 Shift Ins	**0.00**
Enter sales price	2 5 0 000 Price	**250,000.00**
Enter down payment %	2 0 Dn Pmt	**20.00**
Find dollar down payment	Dn Pmt	**50,000.00**
Find loan amount	Loan Amt	**200,000.00**
Display qualifying ratios	Qual 1	**28.00-36.00**
Find income required	Qual 1	**"run" 71,219.12**
Find maximum allowable monthly debt	Qual 1	**"run" 474.79**
Find P&I payment	Pmt	**1,297.20**
Find PITI payment	Pmt	**1,661.78**

Solving for Actual Qualifying Ratios

A buyer who makes $120,000 annually and has $550 in long-term monthly debt wants to borrow $275,000 to purchase a home. He has $68,750 for the down payment and the property tax/insurance rates are estimated at 1.4% and 0.2%, respectively; monthly homeowner's association dues are $65. Use 6.5% interest for 30 years. What are his actual ratios? What is the price of the home he can afford? What is the monthly payment?

STEPS	KEYSTROKES		DISPLAY
Clear calculator	On/C On/C		**0.00**
Enter interest	6 • 5 Int		**6.50**
Enter term	3 0 Term		**30.00**
Enter loan amount	2 7 5 000 Loan Amt		**275,000.00**
Enter down payment	6 8 7 5 0 DnPmt		**68,750.00**
Enter annual income	1 2 0 000 Inc		**120,000.00**
Enter monthly debt	5 5 0 Debt		**550.00**
Enter property tax rate	1 • 4 Tax		**1.40**
Enter property insurance rate	• 2 Ins		**0.20**
Clear mortgage insurance rate*	0 Shift Ins		**0.00**
Enter monthly association dues	6 5 Exp		**65.00**
Display stored ratios	Qual 1		**28.00-36.00**
Calculate actual ratios	Qual 1	**"run"**	**22.62-28.12**
Find sales price	Price		**343,750.00**
Find the P&I payment	Pmt		**1,738.19**
Find the PITI payment	Pmt		**2,196.52**
Find the total payment	Pmt		**2,261.52**

**Should be set to zero in this case, as the down payment is 20%; to check down payment percentage, press DnPmt again and it will read 20.00%.*

1ST AND 2ND TRUST DEEDS (COMBO LOANS)

Your calculator also figures Combo loans, or 1st and 2nd Trust Deeds, which are common financing options for clients with smaller down payments, who want to avoid mortgage insurance. The benefit of Combo loans over single, fixed-rate loans with mortgage insurance is that the buyer can actually save money obtaining two loans vs. a single, larger loan requiring monthly mortgage insurance.

This calculator will find, after entry of appropriate loan variables (including 1st and 2nd TD interest and term), the following loan values for 80:10:10 and 80:15:5 — or any LTV — loans:

- Blended interest rate for 1st and 2nd TD and equivalent interest rate of fixed-rate loan w/mortgage insurance;
- Combined payment for 1st and 2nd TD and equivalent payment for fixed-rate loan w/mortgage insurance;
- Monthly savings of 1st and 2nd TD over fixed-rate loan w/mortgage insurance;
- Adjusted term if savings is applied to 2nd TD; and
- 1st and 2nd TD loan amounts and payments.

See the following examples. Note the first examples are for 80:10:10 and 80:15:5 loans, and the last example demonstrates how to enter any LTV.

Combo Loan (80:10:10) vs. Fixed-Rate Loan with Mortgage Insurance

You'd like to show your client the savings of a fixed-rate Combo Loan (80:10:10) over that of a standard, fixed-rate loan with mortgage insurance, or PMI. You have the following parameters:

	FIXED-RATE LOAN w/PMI	FIXED-RATE COMBO LOAN (1st TD – 2nd TD)
Loan Amount	100,000	100,000
Interest	7%	8% – 10%
Term	30	30 year – 10 year
PMI	2.5%	--
LTV	95%	80% – 10%

STEPS	KEYSTROKES	DISPLAY
1. Enter Fixed-Rate Loan Values and Find Total Payment:		
Clear calculator	On/C On/C	**0.00**
Enter loan amount	1 0 0 000 Loan Amt	**100,000.00**
Enter interest	7 Int	**7.00**
Enter term	3 0 Term	**30.00**
Enter PMI (mortgage insurance) value	2 • 5 Shift Ins	**2.50**
Clear Tax register	0 Tax	**0.00**
Clear Insurance register	0 Ins	**0.00**
Solve for P&I payment	Pmt	**665.30**
Solve for PITI payment (with PMI)	Pmt	**873.64**
2. Enter Combo Loan Values:		
Enter 1st TD Interest:Term	8 : 3 0 1st Int: Term	**8.00-30.00**
Enter 2nd TD Interest:Term	1 0 : 1 0 Shift 1st Int: Term	**10.00-10.00**

(Cont'd)

(Cont'd)

STEPS	KEYSTROKES	DISPLAY
3. Find 80:10:10 Combo Loan and Comparison Values (vs. Fixed-Rate Loan with Mortgage Insurance):		
Find 1st:2nd combined (blended) interest rate	80:10:10	**8.11**
Find equivalent interest rate of single, fixed-rate loan with mortgage insurance	80:10:10	**9.95**
Find total combined (1st/2nd) payment	80:10:10	**799.07**
Find equivalent payment of single, fixed-rate loan with mortgage insurance	80:10:10	**873.64**
Find monthly savings over fixed-rate loan with mortgage insurance	80:10:10	**74.57**
Find adjusted 2nd term (if savings applied to 2nd TD)	80:10:10	**5.44**
Find 1st TD loan amount	80:10:10	**88,888.89**
Find 2nd TD loan amount	80:10:10	**11,111.11**
Find 1st TD monthly payment	80:10:10	**652.24**
Find 2nd TD monthly payment	80:10:10	**146.83**
Re-display LTV	80:10:10	**80.00-10.00**

Combo Loan (80:15:5) vs. Fixed-Rate Loan with Mortgage Insurance

You'd like to show your client the savings of a fixed-rate Combo Loan over that of a standard, fixed-rate loan with mortgage insurance or PMI. The LTV for the 1st/2nd TD is 80/15. See the following parameters:

	FIXED-RATE LOAN w/PMI	FIXED-RATE COMBO LOAN (1st TD – 2nd TD)
Loan Amount	100,000	100,000
Interest	7%	8% – 10%
Term	30	30 year – 10 year
PMI	2.5%	--
LTV	95%	80% – 15%

STEPS	KEYSTROKES	DISPLAY
1. Enter Fixed-Rate Loan Values and Find Total Payment:		
Clear calculator	On/C On/C	**0.00**
Enter loan amount	1 0 0 000 Loan Amt	**100,000.00**
Enter interest	7 Int	**7.00**
Enter term	3 0 Term	**30.00**
Enter PMI (mortgage insurance) value	2 • 5 Shift Ins	**2.50**
Clear tax register	0 Tax	**0.00**
Clear insurance register	0 Ins	**0.00**
Solve for P&I payment	Pmt	**665.30**
Solve for PITI payment (with PMI)	Pmt	**873.64**
2. Enter Combo Loan Values:		
Enter 1st TD Interest:Term	8 : 3 0 1st Int: Term	**8.00-30.00**
Enter 2nd TD Interest:Term	1 0 : 1 0 Shift 1st Int: Term	**10.00-10.00**

(Cont'd)

(Cont'd)

STEPS	KEYSTROKES	DISPLAY
3. Find 80:15:5 Combo Loan and Comparison Values (vs. Fixed-Rate Loan with Mortgage Insurance):		
Find 1st:2nd blended interest rate	Shift 80:10:10 (80:15:5)	**8.16**
Find equivalent interest rate of single, fixed-rate loan with mortgage insurance	80:10:10	**9.95**
Find total combined (1st/2nd) payment	80:10:10	**826.57**
Find equivalent payment of single, fixed-rate loan with mortgage insurance	80:10:10	**873.64**
Find monthly savings over fixed-rate loan w/PMI	80:10:10	**47.07**
Find adjusted 2nd term (if savings applied to 2nd TD)	80:10:10	**7.26**
Find 1st TD loan amount	80:10:10	**84,210.53**
Find 2nd TD loan amount	80:10:10	**15,789.47**
Find 1st TD monthly payment	80:10:10	**617.91**
Find 2nd TD monthly payment	80:10:10	**208.66**
Re-display LTV	80:10:10	**80.00-15.00**

Combo Loan — *Entering a New LTV*

You'd like to show your client the savings of a fixed-rate Combo Loan over that of a standard, fixed-rate loan with PMI. The LTV for the 1st/2nd TD is 90%-5%. See the following parameters:

	FIXED-RATE LOAN w/PMI	**FIXED-RATE COMBO LOAN (1st TD – 2nd TD)**
Loan Amount	100,000	100,000
Interest	7%	8% – 10%
Term	30	30 year – 10 year
PMI	2.5%	--
LTV	95%	90% – 5%

STEPS	KEYSTROKES	DISPLAY
1. Enter Fixed-Rate Loan Values and Find Total Payment:		
Clear calculator	On/C On/C	**0.00**
Enter loan amount	1 0 0 000 Loan Amt	**100,000.00**
Enter interest	7 Int	**7.00**
Enter term	3 0 Term	**30.00**
Enter PMI (mortgage insurance) value	2 • 5 Shift Ins	**2.50**
Clear tax register	0 Tax	**0.00**
Clear insurance register	0 Ins	**0.00**
Solve for P&I payment	Pmt	**665.30**
Solve for PITI payment (with PMI)	Pmt	**873.64**
2. Enter Combo Loan Values:		
Enter 1st TD Interest:Term	8 : 3 0 1st Int: Term	**8.00-30.00**
Enter 2nd TD Interest:Term	1 0 : 1 0 Shift 1st Int: Term	**10.00-10.00**

(Cont'd)

(Cont'd)

STEPS	KEYSTROKES	DISPLAY
3. Find 90:5:5 Combo Loan and Comparison Values (vs. Fixed-Rate Loan with Mortgage Insurance):		
Enter LTV and find 1st:2nd blended interest rate	90 . 5 80:10:10	**8.05**
Find equivalent interest rate of fixed-rate loan with mortgage insurance/MI	80:10:10	**9.95**
Find total combined (1st/2nd) payment	80:10:10	**764.70**
Find equivalent payment of fixed-rate loan with MI	80:10:10	**873.64**
Find monthly savings over fixed-rate loan with MI	80:10:10	**108.94**
Find adjusted 2nd term (if savings applied to 2nd TD)	80:10:10	**2.83**
Find 1st TD loan amount	80:10:10	**94,736.84**
Find 2nd TD loan amount	80:10:10	**5,263.16**
Find 1st TD monthly payment	80:10:10	**695.15**
Find 2nd TD monthly payment	80:10:10	**69.55**
Re-display LTV	80:10:10	**90.00-5.00**

Note: an entered LTV is not stored; in order to re-calculate a Combo Loan based on a different LTV than 80:10:10 or 80:15:5, you will need to enter the LTV prior to pressing 80:10:10 *(or* Shift 80:10:10*).*

APPENDIX

Default Settings

Performing a total Reset (see below) will return the calculator to the following default settings:

- Two Fixed Decimal Places
- 12 Periods per Year = Reset to 12 Upon Off
- Property Tax/Insurance = Values Cleared Upon Off
- Mortgage Insurance. = Values Cleared Upon On/C On/C
- Amortization Range = Specified Year (Ent-Ent)
- Qualifying Ratios Displayed 1st
- Month Offset to January (1)
- Tax Bracket = 28%
- Qual 1 Ratios = 28%-36%
- Qual 2 Ratios = 29%-41%
- Combo Loan 1st:2nd LTV = 80%:10%; 80%:15%

Reset

Manual Reset

If your calculator's display should ever freeze or "lock up," press **Reset** — a small hole located to the left of the Off key — to perform a total reset. (It is recommended you use a straightened paper clip, as the hole is extremely small).

Keystroke Reset — Returning the Calculator to its Original Factory Settings

You may at times want to reset your calculator to its factory settings (i.e., reset all registers and Preference Settings to their original default values). To do this, turn off the calculator, hold down the ⊠ key, and then turn it back on.

Error Codes

With an incorrect entry or answer beyond the range of the calculator, the display will show one of the following error messages. To clear an error, simply press any key.

OFLO — Number Too Large to Display
DIV Error — Attempted to Divide by Zero
TVM Error — Time-Value-of-Money Error
ENT Error — Invalid Entry
PPY Error — Payments Per Year Error
QL Error — Qualifying Error

Auto Shut-Off

Your calculator is designed to shut itself off after about 8-12 minutes of non-use.

Batteries

Should the display become very dim or erratic, replace the batteries.

Batteries Included: Two LR44 (1.5V) batteries

Battery-Life (Actual Use): 1,000 hours

☑ *Note: Please use caution when disposing of your old batteries, as they contain hazardous chemicals.*

Replacing the Batteries: Slide open and remove the battery door (located on upper backside of calculator). Remove the old batteries. Insert two new LR44 button-cell batteries, making sure they're facing positive-side (+) up. Close the battery door.

☑ *Note: Replacement batteries are available at most camera or electronics stores. You may also call Calculated Industries at 1-800-854-8075.*

Repair and Return

Warranty, Repair and Return Information!

Return Guidelines:

1. Please read the ***Warranty*** in this User's Guide to determine if your Calculated Industries calculator, measuring device or electronic tool remains under warranty **before** calling or returning any device for evaluation or repairs.
2. If your calculator won't turn on, try pressing the "**Reset Button**" first. If it still won't turn on, check the batteries as outlined in the User's Guide.
3. **If there is a black spot on the LCD screen, THIS IS NOT A WARRANTY DEFECT. The unit can be repaired. Call for a repair quote before returning your unit.**
4. If you need more assistance, please go to our website at www.calculated.com and click on Support, then Repair Services FAQs.
5. If you believe you need to return your calculator, please speak to a Calculated Industries representative for additional information!

Call Toll Free: 1-800-854-8075

Warranty Repair Service – U.S.A.

Calculated Industries ("CI") warrants this product against defects in materials and workmanship for a period of **one (1) year from the date of original consumer purchase in the U.S.** If a defect exists during the warranty period, CI at its option will either repair (using new or remanufactured parts) or replace (with a new or remanufactured calculator) the product at no charge.

THE WARRANTY **WILL NOT APPLY** TO THE PRODUCT IF IT HAS BEEN DAMAGED BY MISUSE, ALTERATION, ACCIDENT, IMPROPER HANDLING OR OPERATION, OR IF UNAUTHORIZED REPAIRS ARE ATTEMPTED OR MADE. SOME EXAMPLES OF DAMAGES NOT COVERED BY WARRANTY INCLUDE, BUT ARE NOT LIMITED TO, BATTERY LEAKAGE, BENDING, OR VISIBLE CRACKING OF THE LCD, WHICH ARE PRESUMED TO BE DAMAGES RESULTING FROM MISUSE OR ABUSE.

To obtain warranty service in the U.S., ship the product postage paid to Calculated Industries (address listed on the last page). Please provide an explanation of the service requirement, your name, address, day phone number and dated proof of purchase (typically a sales receipt). If the product is over 90 days old, include payment of $6.95 for return shipping and handling within the contiguous 48 states. (Outside the contiguous 48 states, please call CI for return shipping costs.)

A repaired or replacement product assumes the remaining warranty of the original product or 90 days, whichever is longer.

Non-Warranty Repair Service – U.S.A.

Non-warranty repair covers service beyond the warranty period, or service requested due to damage resulting from misuse or abuse.

Contact Calculated Industries at the number listed above to obtain current product repair information and charges. Repairs are guaranteed for 90 days.

Repair Service – Outside the U.S.A.

To obtain warranty or non-warranty repair service for goods purchased outside the U.S., contact the dealer through which you initially purchased the product. If you cannot reasonably have the product repaired in your area, you may contact CI to obtain current product repair information and charges, including freight and duties.

Disclaimer

CI MAKES NO WARRANTY OR REPRESENTATION, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCT'S QUALITY, PERFORMANCE, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. AS A RESULT, THIS PRODUCT, INCLUDING BUT NOT LIMITED TO, KEYSTROKE PROCEDURES, MATHEMATICAL ACCURACY AND PREPROGRAMMED MATERIAL, IS SOLD "AS IS," AND YOU THE PURCHASER ASSUME THE ENTIRE RISK AS TO ITS QUALITY AND PERFORMANCE.

IN NO EVENT WILL CI BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE PRODUCT OR ITS DOCUMENTATION.

The warranty, disclaimer, and remedies set forth above are exclusive and replace all others, oral or written, expressed or implied. No CI dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary from state to state.

Legal Notes

Looking For New Ideas

Calculated Industries, a leading manufacturer of special-function calculators and digital measuring instruments, is always looking for new product ideas in these areas.

If you have an idea, or a suggestion for improving this product or User's Guide, please submit your comments online at www.calculated.com under "Contact Us," "Product Idea." Thank you.

INDEX

1ST AND 2ND TRUST DEEDS (COMBO LOANS), 61
1st/2nd TD (Combo Loan) Keys, 14
Actual Qualifying Ratios, Solving for, 60
Adjustable Rate Mortgages, 37
Amortization and Remaining Balance, 41
Amortization List for a Range of Payments or Years, 46
Amortization List for Individual Payment(s), 45
Amortization List for Individual Year(s)—Using “Next” Feature, 43
Amortization List for Individual Year(s)—Using Month Offset, 44
Appendix, 68
Appreciation, 28
Appreciation for a Home (Add-on %), 17
ARM Payment—Using Lifetime Cap, 39
ARM Payment—Worst-Case Scenario, 38
Auto Shut-Off, 69
Balloon Payment, 49
BASIC ARITHMETIC EXAMPLES, 16
Basic Operation Keys, 5
Batteries, 69
Bi-Weekly Loans, 49
BUYER QUALIFYING, 53
CALCULATOR SETTINGS, 19
Combo Loan (80:10:10) vs. Fixed-Rate Loan with Mortgage Insurance, 62
Combo Loan (80:15:5) vs. Fixed-Rate Loan with Mortgage Insurance, 64
Combo Loan—Entering New LTV, 66
Date Examples, 18
Decimal Place Selection, 19
Decreasing ARM Payment, 40
Default Settings, 68
Error Codes, 68
Estimated Income Tax Savings and “After-Tax” Payment, 35
Examples, 25
Figuring Straight % Commission, 16
Finding APR, Total Finance Charges (Excluding Mortgage Insurance), 47
Finding Loan Amount Based on Sales Price and Down Payment, 30
Future Value, 28
Income Required and Allowable Monthly Debt, 59
Income/Debt Qualifying Ratios, Recalling, 54
Increasing and Decreasing ARM Payment, 40
Interest Rate, Finding an, 26
KEY DEFINITIONS, 5
Loan Amount, Finding, 27
MEMORY, 22
Memory Storage Keys (M0-M6), 23

Monthly Mortgage (P&I) Payment, 26
Mortgage Loan (TVM) Keys, 6
MORTGAGE LOANS/TIME-VALUE-OF-MONEY (TVM) EXAMPLES, 25
Non-Monthly Loans, 29
Odd-Days Interest and APR, 48
Paying Off a Loan Early (Making Larger Payments), 27
Percentage Calculations, 16
PITI Payment (Tax and Insurance Entered as %), 34
Preference Settings, 20
Qualifying Comparison, 58
QUALIFYING EXAMPLES, 54
Qualifying Keys, 10
Qualifying Loan Amount and Sales Price, Finding, 55
Qualifying Loan Amount and Sales Price--Complete Example, 56
Quarterly Payment, Finding a, 29
Reduction in Listing Price (Discount %), 17
Rent vs. Buy, 36
Rent vs. Buy Keys, 10
Repair and Return guidelines, 69
Reset, 68
Restricted Qualifying, 57
Sales Price/Down Payment, 30
Simple Interest vs. Compound Interest, 28
Storing New Income/Debt Qualifying Ratios, 54
Tax and Insurance $, Setting, 32
Tax and Insurance % or $, Calculating, 33
Tax and Insurance % Rates, Recalling, 32
Tax and Insurance % Rates, Setting, 32
Tax Savings Keys, 9
Tax, Insurance and Expense Keys, 13
Taxes and Insurance, 31
Term of a Loan, 26
Total Payment, 34
Total Principal/Total Interest for a 30-Year Loan, 42
Trust Deeds and Discounted Notes, 50
Unrestricted Qualifying, 57
Warranty, 70

NOTES

NOTES

Designed in the United States of America
Printed in China

3415UG-E-D