**TEXAS INSTRUMENTS**

# BA Real Estate™

## WORKSHEETS

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# Mortgage Payment—Principal and Interest

1. Clear TVM values (if not already cleared).    [2nd] [CLR TVM]

2. Enter sales price.    _____

3. Subtract down payment.    [−] _____ [%]

4. Calculate and enter loan amount.    [=] [_____ LOAN]

5. Enter term of loan (in years).    _____ [TERM]

6. Enter interest rate.    _____ [I%]

7. Compute payment amount.    [CPT] [PMT] [_____]

Prepared for _____ By _____ Date _____

## Calculating Unpaid Balance on an Existing Mortgage

1.  Clear TVM values (if not already cleared).  [2nd] [CLR TVM]

2.  Enter original term of loan (in years). _____ [TERM]

3.  Enter interest rate. _____ [I%]

4.  Enter original loan amount. _____ [LOAN]

5.  Compute payment. [CPT] [PMT] [            ]

6.  Enter number of payments made. _____ [2nd] [N]

7.  Compute unpaid balance. [CPT] [FV] [            ]

**Note:** You also can use the Amortization key to calculate unpaid balance. The answer may be slightly different, due to rounding differences between the two methods.

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## Paying Off a Loan Early by Making Larger Payments

1. Clear TVM values (if not already cleared).  [2nd] [CLR TVM]

2. Enter term of loan (in years). _____ [TERM]

3. Enter interest rate. _____ [I%]

4. Enter loan amount. _____ [LOAN]

5. Compute monthly payment.  [CPT] [PMT] _____

6. Add extra payment amount (as a negative amount). [+] _____ [+/−]

7. Calculate and enter new, larger payment. [=] [PMT] _____

8. Compute new term. [CPT] [TERM] _____

Prepared for _____ By _____ Date _____

# Calculating a Balloon Payment to Retire a Mortgage

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1. Clear TVM values (if not already cleared).  2nd [CLR TVM]

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2. Enter term of loan (in years).  _____ TERM

3. Enter interest rate.  _____ I%

4. Enter loan amount.  _____ LOAN

5. Compute payment amount and round the result.  CPT PMT [_____] 2nd [ROUND] PMT

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6. Enter the number of payments made.  _____ 2nd [N]

7. Compute unpaid balance.  CPT FV [_____]

8. Add payment computed in line 5.*  + RCL PMT [_____]

9. Calculate the balloon payment.  = [_____]

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* The balloon payment includes both the unpaid balance (step 7) and the final monthly payment.

**Comment:** Another school of thought is to omit steps 8 and 9 and simply calculate an unpaid balance as the balloon payment. The only difference between the two results is the amount of the final monthly payment.

Prepared for _____ By _____ Date _____

## Calculating Monthly Payment for a Mortgage with a Balloon Payment

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | ⟦2nd⟧ ⟦CLR TVM⟧ |

| | | | |
|---|---|---|---|
| 2. | Enter term of loan (in years). | _____ | ⟦TERM⟧ |
| 3. | Enter interest rate. | _____ | ⟦I%⟧ |
| 4. | Enter loan amount. | _____ | ⟦LOAN⟧ |
| 5. | Enter amount of balloon payment, as a negative value. | _____ | ⟦+/−⟧ ⟦FV⟧ |

| | | | |
|---|---|---|---|
| 6. | Compute monthly payment. | ⟦CPT⟧ ⟦PMT⟧ | [               ] |

Prepared for _____ By _____ Date _____

# Time Required to Reduce a Loan to a Specific Amount

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | 2nd [CLR TVM] |

| 2. | Enter term of loan (in years). | _____ TERM |
|---|---|---|
| 3. | Enter interest rate. | _____ I% |
| 4. | Enter loan amount. | _____ LOAN |
| 5. | Compute monthly payment. | CPT PMT [ ] |
| 6. | Enter amount (as a negative value) that the principal will be reduced to. | _____ +/− FV |

| 7a. | Compute the number of years required to reduce the principal, or see step 7b. | CPT TERM [ ] years |
|---|---|---|
| 7b. | Compute the number of payments required to reduce the principal. | CPT 2nd [N] [ ] # of payments |

Prepared for _____ By _____ Date _____

## PITI—Principal, Interest, Tax, and Insurance Based on Annual Tax and Insurance Amounts

| | | | | |
|---|---|---|---|---|
| 1. | Clear TVM values (if not already cleared). | 2nd [CLR TVM] | | |
| 2. | Enter annual tax amount. | | _____ | |
| 3. | Add annual insurance amount. | + | _____ | |
| 4. | Calculate and enter total tax and insurance.* | = | _____ | 2nd [TAX&INS $] |
| 5. | Enter term of loan (in years). | | _____ | TERM |
| 6. | Enter interest rate. | | _____ | I% |
| 7. | Enter loan amount. | | _____ | LOAN |
| 8. | Compute payment (principal and interest). | CPT PMT | | |
| 9. | Compute PITI. | CPT PITI | | |

\* The calculator uses the TAX&INS$ amount, ignoring the TAX% and INS% settings. TAX% and INS% are used only when TAX&INS$ is zero.

Prepared for _____ By _____ Date _____

## PITI—Principal, Interest, Tax, and Insurance Based on Tax and Insurance Percents

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |
| 2. | Enter local property-tax rate (if not already entered). | _____ [2nd] [TAX%] |
| 3. | Enter local insurance rate (if not already entered). | _____ [2nd] [INS%] |
| 4. | Enter price.* | _____ [PRICE] |
| 5. | Enter term of loan (in years). | _____ [TERM] |
| 6. | Enter interest rate. | _____ [I%] |
| 7. | Enter loan amount. | _____ [LOAN] |
| 8. | Compute payment (principal and interest). | [CPT] [PMT] ☐ |
| 9. | Compute PITI. | [CPT] [PITI] ☐ |

\* You can omit this step. If you do, however, the tax and insurance amounts will be computed as percentages of the loan amount, rather than the sales price of the property. This could result in underestimating PITI.

Prepared for _____ By _____ Date _____

## Bi-Weekly Mortgage Payments

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |

2. Enter term of loan (in years).            _____ [TERM]

3. Enter interest rate.            _____ [I%]

4. Enter loan amount.            _____ [LOAN]

5. Start Bi-Weekly and view the bi-weekly payment amount.    [BI-WKLY]

6. View the number of bi-weekly payments (N) required to pay off loan.    [=]

7. View the number of years (YRS) required.    [=]

8. View the interest saved at the end of the term by making bi-weekly payments instead of monthly payments.    [=]

Prepared for _____ By _____ Date _____

# Adjustable Rate Mortgage

| | | | |
|---|---|---|---|
| 1. | Clear TVM values (if not already cleared). | 2nd [CLR TVM] | |
| 2. | Set number of payments per year and number of compounding periods per year (if not already set). | 2nd [P/Y] _____ | = |
| | | _____ | = |
| 3. | Enter term of loan (in years). | _____ | TERM |
| 4. | Enter interest rate. | _____ | I% |
| 5. | Enter loan amount. | _____ | LOAN |
| 6. | Start ARM. | ARM | |
| 7. | Accept the number of the initial payment (P1). | [_____] | = |
| 8. | Enter the number of the ending payment (P2) for the first adjustment period. | [_____] | = |
| 9. | Accept the initial interest rate. | [_____] | = |
| 10. | View monthly payment amount for this adjustment period. | [_____] | |
| 11. | View balance at end of this adjustment period. | = [_____] | |
| 12. | Return to P1 and accept updated P1 as beginning payment of second adjustment period. | = [_____] | = |
| 13. | Accept the updated P2, or enter the number of the ending payment of the second adjustment period. | [_____] | = |
| 14. | Enter the interest rate for this period. | _____ | |
| 15. | View payment amount for this adjustment period. | = [_____] | |
| 16. | View balance at end of this adjustment period. | = [_____] | |
| 17. | Return to P1 and accept updated P1 as the number of the beginning payment of the new adjustment period. | = [_____] | = |
| 18. | Accept updated P2 as the number of the ending payment of the new adjustment period. | [_____] | = |
| 19. | Enter the interest rate for this period. | _____ | |
| 20. | View payment amount for this adjustment period. | = [_____] | |
| 21. | View balance at end of this adjustment period. | = [_____] | |

Repeat steps 17 through 21 until the maximum interest rate has been reached.

Prepared for _____ By _____ Date _____

# Adjustable Rate Mortgage vs. Fixed-Rate Mortgage

1. Use the Adjustable Rate Mortgage worksheet to calculate the payments for each adjustment period of the ARM and record those values in steps 4, 9, 15, and 21 respectively.

2. Use the Mortgage Payment—Principal and Interest worksheet to calculate the payment for the fixed-rate mortgage and record that value in steps 3, 8, 14, and 20.

3. Enter amount of fixed-rate payment. _____ [+/−]

4. Subtract amount of initial ARM payment. [−] _____

5. View monthly savings/costs with ARM payment. [=] [_____]

6. Multiply monthly savings/costs by the number of months in the initial ARM period. [×] ___ [=] _____ [STO] [1]

7. Record total savings/costs during this period. _____

8. Enter amount of fixed-rate payment. [RCL] [PMT] _____ [+/−]

9. Subtract amount of ARM payment for second period. [−] _____

10. View monthly savings/costs during second period. [=] [_____]

11. Multiply monthly savings/costs by number of months in this adjustment period. [×] ___ [=] _____

12. Add to recorded savings/costs from step 7. [+] [RCL] [1] _____

13. Record accumulated savings/costs. [=] [STO] [1] _____

14. Enter amount of fixed-rate payment. [RCL] [PMT] _____ [+/−]

15. Subtract amount of ARM payment for third period. [−] _____

16. View monthly savings/costs during third period. [=] [_____]

17. Multiply monthly savings/costs by number of months in this adjustment period. [×] ___ [=] _____

18. Add to recorded savings/costs from step 13. [+] [RCL] [1] _____

19. Record accumulated savings/costs. [=] [STO] [1] _____

Prepared for _____ By _____ Date _____

| | | | |
|---|---|---|---|
| 20. | Enter amount of fixed-rate payment. | RCL PMT _____ +/− |
| 21. | Subtract amount of ARM payment for fourth period. | − _____ |
| 22. | View monthly savings/costs during fourth period. | = [_____] |
| 23. | Multiply monthly savings/costs by number of months in this adjustment period. | × ___ = _____ |
| 24. | Add to recorded savings/costs from step 19. | + RCL 1 _____ |
| 25. | Record accumulated savings/costs. | = STO 1 _____ |

Continue the comparison until the accumulated savings in the last column are reduced to or below zero. That is the breakeven point in the comparison. Once it is apparent that the savings will be exhausted in a given year, divide the monthly costs into the previous year's total savings. This will tell you how many months will occur during that period before the savings are exhausted.

Prepared for _____ By _____ Date _____

## Payment and Remaining Balance on a Canadian Mortgage

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |
| 2. | Enter number of payment periods per year. | [2nd] [P/Y] _____ [=] |
| 3. | Set compounding periods to semi-annual. | 2 [=] |
| 4. | Enter term of loan (in years). | _____ [TERM] |
| 5. | Enter interest rate. | _____ [I%] |
| 6. | Enter loan amount. | _____ [LOAN] |
| 7. | Compute payment amount. | [CPT] [PMT] |
| 8. | Enter number of payments made, and store as N. | __ [×] __ [=] _____ [2nd] [N] |
| 9. | Compute balance at end of period. | [CPT] [FV] |

**Note:** If you do not normally solve Canadian mortgage problems, be sure to restore the compounding periods per year to 12.

Prepared for _____ By _____ Date _____

# Amortization Schedule

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | 2nd [CLR TVM] |
| 2. | Enter term of loan (in years). | _____ TERM |
| 3. | Enter interest rate. | _____ I% |
| 4. | Enter loan amount. | _____ LOAN |
| 5. | Compute payment (principal and interest). | CPT PMT [_____] |
| 6. | Start Amortization. | AMORT |
| 7. | Accept initial payment period (P1), or enter the number of the beginning payment period. | [_____] = |
| 8. | Accept ending payment period (P2), or enter the number of the ending payment period. | [_____] = |
| 9. | View balance remaining after P2. | [_____] |
| 10. | View principal paid from P1 through P2. | = [_____] |
| 11. | View interest paid from P1 through P2. | = [_____] |
| 12. | Return to P1 and accept updated P1 as next beginning payment period. | = [_____] = |
| 13. | Accept updated P2, or enter the number of the next ending payment period. | [_____] = |
| 14. | View balance remaining after P2. | [_____] |
| 15. | View principal paid from P1 through P2. | = [_____] |
| 16. | View interest paid from P1 through P2. | = [_____] |
| 17. | Return to P1 and accept updated P1 as next beginning payment period. | = [_____] = |
| 18. | Accept updated P2 as the next ending payment period. | [_____] = |
| 19. | View balance remaining after P2. | [_____] |
| 20. | View principal paid from P1 through P2. | = [_____] |
| 21. | View interest paid from P1 through P2. | = [_____] |

Repeat steps 17 through 21 as necessary.

Prepared for _____ By _____ Date _____

## Amortization for a Specific Range of Payments

1. Clear TVM values (if not already cleared).     2nd [CLR TVM]

2. Enter term of loan (in years).     _____ TERM

3. Enter interest rate.     _____ I%

4. Enter loan amount.     _____ LOAN

5. Compute payment (principal and interest).     CPT PMT [_____]

6. Start Amortization.     AMORT

7. Enter the number of the beginning payment period (P1).     _____ =

8. Enter the number of the ending payment period (P2).     _____ =

9. View balance remaining after payment P2.     [_____]

10. View principal paid from P1 through P2.     = [_____]

11. View interest paid from P1 through P2.     = [_____]

Prepared for _____ By _____ Date _____

## Finding Qualifying Loan Amount Based on
## Tax, Insurance, and Down Payment Percents

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |
| 2. | Enter income percent (if not already entered). | _____ [2nd] [INC%] |
| 3. | Enter debt percent (if not already entered). | _____ [2nd] [DEBT%] |
| 4. | Enter tax percent (if not already entered). | _____ [2nd] [TAX%] |
| 5. | Enter insurance percent (if not already entered). | _____ [2nd] [INS%] |
| 6. | Enter term of loan (in years). | _____ [TERM] |
| 7. | Enter interest rate. | _____ [I%] |
| 8. | Start the qualification. | [QUAL LA] |
| 9. | Enter gross monthly income amount (total). | _____ [=] |
| 10. | Enter monthly debt amount (total). | _____ [=] |
| 11. | Enter down payment percent (0 to 99). | _____ |
| 12. | Compute PITI. | [=] |
| 13. | Compute payment. | [=] |
| 14. | Compute qualifying loan amount. | [=] |
| 15. | Compute qualifying sales price. | [=] |
| 16. | Compute down payment amount. | [=] |

Prepared for _____  By _____  Date _____

## Finding Qualifying Loan Amount Based on
## Tax and Insurance Percents and Down Payment Amount

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |
| 2. | Enter income percent (if not already entered). | _____ [2nd] [INC%] |
| 3. | Enter debt percent (if not already entered). | _____ [2nd] [DEBT%] |
| 4. | Enter tax percent (if not already entered). | _____ [2nd] [TAX%] |
| 5. | Enter insurance percent (if not already entered). | _____ [2nd] [INS%] |
| 6. | Enter term of loan (in years). | _____ [TERM] |
| 7. | Enter interest rate. | _____ [I%] |
| 8. | Start the qualification. | [QUAL LA] |
| 9. | Enter monthly income amount (total). | _____ [=] |
| 10. | Enter monthly debt amount (total). | _____ [=] |
| 11. | Enter down payment amount (in dollars).* | _____ |
| 12. | Compute PITI. | [=] [_____] |
| 13. | Compute payment. | [=] [_____] |
| 14. | Compute qualifying loan amount. | [=] [_____] |
| 15. | Compute qualifying sales price. | [=] [_____] |
| 16. | Compute down payment amount. | [=] [_____] |

* The calculator accepts any number greater than 99 as a down payment dollar amount.

Prepared for _____ By _____ Date _____

## Finding Qualifying Loan Amount Based on
## Tax and Insurance Amounts and Down Payment Percent

| | | | |
|---|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] | |
| 2. | Enter income percent (if not already entered). | _____ | [2nd] [INC%] |
| 3. | Enter debt percent (if not already entered). | _____ | [2nd] [DEBT%] |
| 4. | Enter annual tax amount. | _____ | |
| 5. | Add annual insurance amount and enter total.* | [+] _____ | [=] [2nd] [TAX&INS $] |
| 6. | Enter term of loan (in years). | _____ | [TERM] |
| 7. | Enter interest rate. | _____ | [I%] |
| 8. | Start the qualification. | [QUAL LA] | |
| 9. | Enter monthly income amount (total). | _____ [=] | |
| 10. | Enter monthly debt amount (total). | _____ [=] | |
| 11. | Enter down payment percent (0 to 99). | _____ | |
| 12. | Compute PITI. | [=] [____] | |
| 13. | Compute payment. | [=] [____] | |
| 14. | Compute qualifying loan amount. | [=] [____] | |
| 15. | Compute qualifying sales price. | [=] [____] | |
| 16. | Compute down payment amount. | [=] [____] | |

\* The calculator uses the TAX&INS$ amount, ignoring the TAX% and INS% settings. TAX% and INS% are used only when TAX&INS$ is zero.

Prepared for _____ By _____ Date _____

# Finding Qualifying Loan Amount Based on Tax, Insurance, and Down Payment Amounts

| | | | |
|---|---|---|---|
| 1. | Clear TVM values (if not already cleared). | 2nd [CLR TVM] | |
| 2. | Enter income percent (if not already entered). | _____ | 2nd [INC%] |
| 3. | Enter debt percent (if not already entered). | _____ | 2nd [DEBT%] |
| 4. | Enter annual tax amount. | _____ | |
| 5. | Add annual insurance amount, and enter total.* | + _____ | = 2nd [TAX&INS $] |
| 6. | Enter term of loan (in years). | _____ | TERM |
| 7. | Enter interest rate. | _____ | I% |
| 8. | Start the qualification. | QUAL LA | |
| 9. | Enter monthly income amount (total). | _____ | = |
| 10. | Enter monthly debt amount (total). | _____ | = |
| 11. | Enter down payment amount (in dollars).** | _____ | |
| 12. | Compute PITI. | = | |
| 13. | Compute payment. | = | |
| 14. | Compute qualifying loan amount. | = | |
| 15. | Compute qualifying sales price. | = | |
| 16. | Compute down payment amount. | = | |

\* The calculator uses the TAX&INS$ amount, ignoring the TAX% and INS% settings. TAX% and INS% are used only when TAX&INS$ is zero.

\*\* The calculator accepts any number greater than 99 as a down payment dollar amount.

Prepared for _____ By _____ Date _____

# Finding Qualifying Income Based on
# Tax, Insurance, and Down Payment Percents

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |
| 2. | Enter income percent (if not already entered). | _____ [2nd] [INC%] |
| 3. | Enter debt percent (if not already entered). | _____ [2nd] [DEBT%] |
| 4. | Enter tax percent (if not already entered). | _____ [2nd] [TAX%] |
| 5. | Enter insurance percent (if not already entered). | _____ [2nd] [INS%] |
| 6. | Enter term of loan (in years). | _____ [TERM] |
| 7. | Enter interest rate. | _____ [I%] |
| 8. | Start the qualification. | [QUAL INC] |
| 9. | Enter price. | _____ [=] |
| 10. | Enter down payment percent (0 to 99). | _____ [=] |
| 11. | Enter monthly debt amount (total). | _____ |
| 12. | Compute qualifying loan amount. | [=] _____ |
| 13. | Compute payment. | [=] _____ |
| 14. | Compute PITI. | [=] _____ |
| 15. | Compute qualifying income. | [=] _____ |

Prepared for _____ By _____ Date _____

## Finding Qualifying Income Based on
## Tax and Insurance Percents and Down Payment Amount

| | | | |
|---|---|---|---|
| 1. | Clear TVM values (if not already cleared). | | [2nd] [CLR TVM] |
| 2. | Enter income percent (if not already entered). | _____ | [2nd] [INC%] |
| 3. | Enter debt percent (if not already entered). | _____ | [2nd] [DEBT%] |
| 4. | Enter tax percent (if not already entered). | _____ | [2nd] [TAX%] |
| 5. | Enter insurance percent (if not already entered). | _____ | [2nd] [INS%] |
| 6. | Enter term of loan (in years). | _____ | [TERM] |
| 7. | Enter interest rate. | _____ | [I%] |
| 8. | Start the qualification. | [QUAL INC] | |
| 9. | Enter price. | _____ | [=] |
| 10. | Enter down payment amount (in dollars).* | _____ | [=] |
| 11. | Enter monthly debt amount (total). | _____ | |
| 12. | Compute qualifying loan amount. | [=] | [_____] |
| 13. | Compute payment. | [=] | [_____] |
| 14. | Compute PITI. | [=] | [_____] |
| 15. | Compute qualifying income. | [=] | [_____] |

\* The calculator accepts any number greater than 99 as a down payment dollar amount.

Prepared for _____  By _____  Date _____

## Finding Qualifying Income Based on
## Tax and Insurance Amounts and Down Payment Percent

| | | | |
|---|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] | |
| 2. | Enter income percent (if not already entered). | _____ | [2nd] [INC %] |
| 3. | Enter debt percent (if not already entered). | _____ | [2nd] [DEBT%] |
| 4. | Enter annual tax amount. | _____ | |
| 5. | Add annual insurance amount, and enter total.* | [+] _____ | [=] [2nd] [TAX&INS $] |
| 6. | Enter term of loan (in years). | _____ | [TERM] |
| 7. | Enter interest rate. | _____ | [I%] |
| 8. | Start the qualification. | [QUAL INC] | |
| 9. | Enter price. | _____ [=] | |
| 10. | Enter down payment percent (0 to 99). | _____ [=] | |
| 11. | Enter monthly debt amount (total). | _____ | |
| 12. | Compute qualifying loan amount. | [=] [_____] | |
| 13. | Compute payment. | [=] [_____] | |
| 14. | Compute PITI. | [=] [_____] | |
| 15. | Compute qualifying income. | [=] [_____] | |

\* The calculator uses the TAX&INS$ amount, ignoring the TAX% and INS% settings. TAX% and INS% are used only when TAX&INS$ is zero.

Prepared for _____  By _____  Date _____

## Finding Qualifying Income Based on
## Tax, Insurance, and Down Payment Amounts

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1.  Clear TVM values (if not already cleared).                    [2nd] [CLR TVM]

2.  Enter income percent (if not already entered).    _____    [2nd] [INC%]

3.  Enter debt percent (if not already entered).      _____    [2nd] [DEBT%]

---

4.  Enter annual tax amount.                          _____

5.  Add annual insurance amount, and        [+]  _____  [=] [2nd] [TAX&INS $]
    enter total.*

6.  Enter term of loan (in years).                    _____    [TERM]

7.  Enter interest rate.                              _____    [I%]

---

8.  Start the qualification.                    [QUAL INC]

9.  Enter price.                                      _____    [=]

10. Enter down payment amount (in dollars).**         _____    [=]

11. Enter monthly debt amount (total).                _____

12. Compute qualifying loan amount.
                                            [=]  [_____]

13. Compute payment.
                                            [=]  [_____]

14. Compute PITI.
                                            [=]  [_____]

15. Compute qualifying income.
                                            [=]  [_____]

---

\*  The calculator uses the TAX&INS$ amount, ignoring the TAX% and INS% settings. TAX% and INS% are used only when TAX&INS$ is zero.

\*\* The calculator accepts any number greater than 99 as a down payment dollar amount.

Prepared for _____  By _____  Date _____

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## Finding Maximum Allowable Debt

---

1.  Enter income percent (if not already entered). _____ 2nd [INC%]

2.  Enter debt percent (if not already entered). _____ 2nd [DEBT%]

3.  Enter tax percent (if not already entered). _____ 2nd [TAX%]

4.  Enter insurance percent (if not already entered). _____ 2nd [INS%]

---

5.  Enter term of loan (in years). _____ TERM

6.  Enter interest rate. _____ I%

---

7.  Start the qualification. QUAL INC

8.  Enter price. _____ =

9.  Enter down payment percent (0 to 99). _____ =

10. Enter a zero for monthly debt amount (total). 0

11. Compute qualifying loan amount. = [          ]

12. Compute payment. = [          ]

13. Compute PITI and store it. = [          ] STO 1

14. Compute qualifying income. = [          ]

15. Multiply by debt ratio. × RCL 2nd [DEBT%] % = [          ]

16. Calculate maximum debt. + RCL 1 = [          ]

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Prepared for _____ By _____ Date _____

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## Net Cost of Housing Based on
## Tax and Insurance Percents

1. Clear TVM values (if not already cleared). [2nd] [CLR TVM]

2. Enter sales price. _____ [PRICE]

3. Enter tax percent (if not already entered). _____ [2nd] [TAX%]

4. Enter insurance percent (if not already entered). _____ [2nd] [INS%]

5. Enter term of loan (in years). _____ [TERM]

6. Enter interest rate. _____ [I%]

7. Enter loan amount. _____ [LOAN]

8. Compute payment. [CPT] [PMT] [_____]

9. Recall loan amount. [RCL] [LOAN] [_____]

10. Multiply by annual interest rate (as a percentage) to find approximate annual interest. [×] [RCL] [I%] [%] [=] [_____] [STO] [1]

11. Add annual tax amount. [RCL] [PRICE] [×] [RCL] [2nd] [TAX%] [%] [=] _____

12. Calculate total tax-deductible items. [+] [RCL] [1] [=] [_____]

13. Multiply by homeowner's income-tax rate. [×] _____ [%]

14. Calculate annual tax savings.* [=] [_____]

15. Divide by 12 to find monthly tax savings, and store the result in memory. [÷] 12 [=] [_____] [STO] [1]

16. Compute PITI. [CPT] [PITI] [_____]

17. Subtract monthly tax savings. [−] [RCL] [1] [+/−] [_____]

18. Calculate monthly net cost of housing. [=] [_____]

\* Assumes the homeowner is not using the standard deduction.

Prepared for _____ By _____ Date _____

## Savings Account with One Deposit

1. Clear TVM values (if not already cleared).  [2nd] [CLR TVM]

2. Enter number of compounding periods per year.  [2nd] [P/Y] _____ [=] [=]

---

3. Enter term of account (in years).  _____ [TERM]

4. Enter interest rate of account.  _____ [I%]

5. Enter initial deposit (as a negative amount) in account.  _____ [+/−] [LOAN]

6. Compute value of account at maturity.  [CPT] [FV]

Prepared for _____ By _____ Date _____

## Savings Account with Regular Deposits

---

1. Clear TVM values (if not already cleared).  [2nd] [CLR TVM]

2. Set beginning-of-period calculations.*  [2nd] [BGN/END]  (as necessary to display **BGN**)

3. Enter number of deposit periods per year.  [2nd] [P/Y] _____ [=]

4. Enter number of compounding periods per year.  _____ [=]

---

5. Enter term of account.  _____ [TERM]

6. Enter interest rate of account.  _____ [I%]

7. Enter initial deposit, if any, (as a negative amount) in account.  _____ [+/−] [LOAN]

8. Enter the amount deposited each period as a negative amount.  _____ [+/−] [PMT]

9. Compute value of account at maturity.  [CPT] [FV] [_____]

---

\* Most savings accounts will be calculated with beginning-of-period payments. The calculator remains set to **BGN** or **END** until you change the setting.

Prepared for _____ By _____ Date _____

## Appreciation

### Total Percent Change/Appreciation Rate

1. Enter starting value or price.                           _____  2nd [V1]

2. Enter ending value or price.                             _____  2nd [V2]

3. Enter number of periods as 1.                          1                   2nd [#PD]

4. Compute appreciation rate.

   CPT 2nd [APPREC]

### Per-Period Percent Change/Appreciation Rate

1. Enter starting value or price.                           _____  2nd [V1]

2. Enter ending value or price.                             _____  2nd [V2]

3. Enter total number of periods over which
   appreciation has occurred. (For annual                   _____  2nd [#PD]
   appreciation, enter the number of years.)

4. Compute appreciation rate per period

   CPT 2nd [APPREC]

### Estimate of Appreciated Value

1. Enter starting value or price.                           _____  2nd [V1]

2. Enter total number of periods over which
   appreciation will occur.                                 _____  2nd [#PD]

3. Enter expected appreciation rate per period.            _____  2nd [APPREC]

4. Compute expected ending value or price.

   CPT 2nd [V2]

Prepared for _____  By _____  Date _____

## Interest Conversion

## From Effective to Nominal

1. Enter effective rate.        _____ [2nd] [EFF]

2. Enter number of compounding periods per year.        _____ [2nd] [PDS/YR]

3. Compute nominal rate. [CPT] [2nd] [NOM]

## From Nominal to Effective

1. Enter nominal rate.        _____ [2nd] [NOM]

2. Enter number of compounding periods per year.        _____ [2nd] [PDS/YR]

3. Compute effective rate. [CPT] [2nd] [EFF]

Prepared for _____ By _____ Date _____

## Annual Percentage Rate Considering Points and Fees

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |

| | | | |
|---|---|---|---|
| 2. | Enter term of loan (in years). | _____ | [TERM] |
| 3. | Enter loan amount. | _____ | [LOAN] |

| | | | |
|---|---|---|---|
| 4. | Start APR. | [APR] | |
| 5. | Enter interest rate. | _____ | [=] |
| 6. | Enter number of points. | _____ | [=] |
| 7. | Enter total fees. | _____ | |
| 8. | View actual annual percentage rate. | [=] [_____] | |

To calculate another APR using the same loan amount and term, press [=] after step 8. The calculator returns to step 5.

Prepared for _____ By _____ Date _____

## Monthly Payment and APR of a Refinanced Loan

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |
| 2. | Enter original term of loan (in years). | _____ [TERM] |
| 3. | Enter interest rate. | _____ [I%] |
| 4. | Enter face value of mortgage loan. | _____ [LOAN] |
| 5. | Compute payment amount. | [CPT] [PMT] _____ |
| 6. | Enter number of payment years. | _____ [TERM] |
| 7. | Compute balance of original loan, and store as amount of refinanced loan. | [CPT] [FV] _____ [+/−] [LOAN] |
| 8. | Set FV to zero. | [0] [FV] |
| 9. | Enter term of refinanced loan. | _____ [TERM] |
| 10. | Enter new interest rate. | _____ [I%] |
| 11. | Compute new monthly payment. | [CPT] [PMT] _____ |
| 12. | Start APR. | [APR] |
| 13. | Enter number of points. | [=] _____ [=] |
| 14. | Enter total fees. | _____ [=] |
| 15. | View actual annual percentage rate. | _____ |

Prepared for _____ By _____ Date _____

## Finding the Purchase Price of a Note
## to Meet a Required Yield

1. Clear TVM values (if not already cleared).  2nd [CLR TVM]

2. Enter term of original note (in years). _____ TERM

3. Enter interest rate of original note. _____ I%

4. Enter amount of original note. _____ LOAN

5. Compute original payment. CPT PMT [ ]

6. Recall total number of payments in original note, and store in memory. RCL 2nd [N] [ ] STO 1

7. Enter number of payments already made. __ × __ = [ ] 2nd [N]

8. Compute current unpaid balance. CPT FV [ ]

9. Recall original number of payments. RCL 1 [ ]

10. Subtract number of payments already made to find number of remaining payments, and save as N. − RCL 2nd [N] = [ ] 2nd [N]

11. Set FV to zero, and then enter required yield (for example, enter 10% as 10). 0 FV _____ I%

12. Compute discounted present value. CPT LOAN [ ]

Prepared for _____ By _____ Date _____

## Yield of a Discounted Mortgage

| | | |
|---|---|---|
| 1. | Clear TVM values (if not already cleared). | [2nd] [CLR TVM] |

| | | | |
|---|---|---|---|
| 2. | Enter original term of loan (in years). | _____ | [TERM] |
| 3. | Enter interest rate. | _____ | [I%] |
| 4. | Enter face value of mortgage loan. | _____ | [LOAN] |
| 5. | Compute payment amount. | [CPT] [PMT] | |

| | | | |
|---|---|---|---|
| 6. | Enter discounted purchase price. | _____ | [LOAN] |
| 7. | Enter number of payments already made and store in memory. | __ [×] __ [=] [STO] [1] | _____ |
| 8. | Calculate number of payments remaining, and store as N. | [RCL] [2nd] [N] [−] [RCL] [1] [=] | _____ [2nd] [N] |
| 9. | Compute annual yield for remaining term. | [CPT] [I%] | |

Prepared for _____ By _____ Date _____