Investit Software Inc. www.investitsoftware.com

Calculator and QuickCalc Canada

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Steps in Using the Calculator

Using Calculator

Calculator offers a variety of programs that help you solve real estate and general financial problems enabling you to make wise financial choices.

QuickCalc is the same program as Calculator that can be accessed instantly from any Investit Program by clicking on QuickCalc on the menu bar, and then selecting the desired Calculator program.

> **Note:** With Calculator, you can save your entries under a Project Name. However, QuickCalc entries and calculations cannot be saved

Steps for using Calculator

1. Open Calculator, which will display the Main Calculator Screen.
2. Click on New Project to open a new project or click on Open Project to call up a saved project.
3. Click on the desired Calculator Program. E.g., Time Value of Money
4. Enter the required information.
5. Click on the Compute Button to calculate and display the results.
6. To Print Reports, click on the Print Reports button.
7. To display the report on the screen, click on Reports on the menu bar and select the desired report.
8. Click on Done to return to the main Calculator screen.

Main Calculator Screen
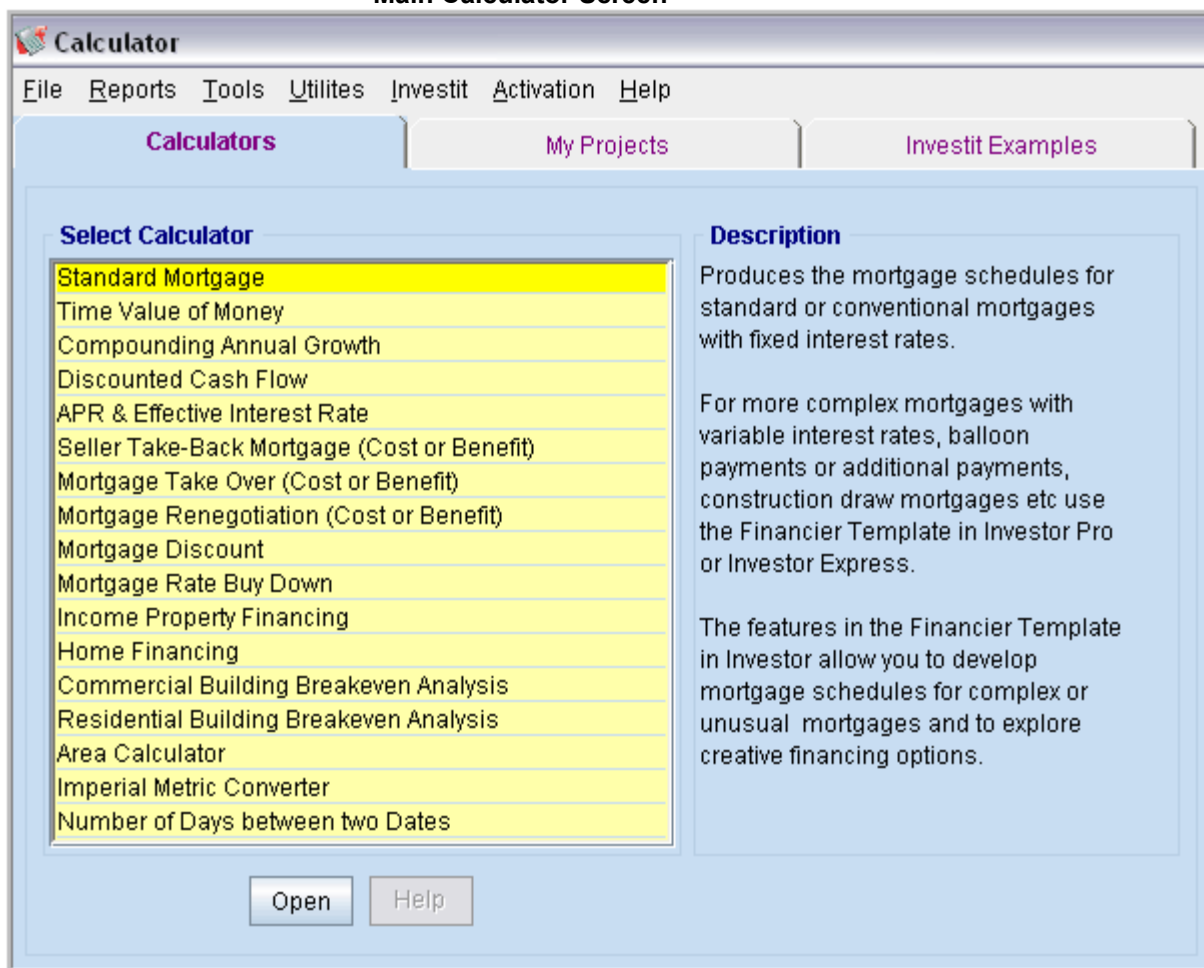
Time Value of Money Calculator
Is used for compound interest calculations involving uniform payments, and can be used to solve a wide variety of financial, mortgage, and loan problems.

The program can solve for:
- ◆ Present Value (PV)
- ◆ Payment
- ◆ Interest Rate
- ◆ Future Value (FV)
- ◆ Time Period

The following examples show the different types of financial problems that can be solved by the Time Value of Money Calculator.

Example # 1: Present Value Calculation

How much should I pay for a property which provides a monthly cash flow of $6,500 at the beginning of each month for 15 years, if I require an Annual Return of 13% compounded monthly? The value of the Property at the end of 15 years is estimated to be $4,100,000.

Calculate:	Present Value
Nominal Interest Rate:	13%
Future Value:	$4,100,000
Payment:	$6,500
Time Period:	15 years
Settings:	
Payment Frequency:	Monthly
Payment made at:	Beginning of Period
Compounding Frequency:	Monthly

Answer:	Present Value: $1,108,774.21

Example # 2: Future Value Calculation

If I invest $2,000 per month at the end of each month at 12% per year, compounded monthly. How much will I have at the end of twenty years?

Calculate:	Future Value
Nominal Interest Rate:	12%
Present Value:	$0.00
Payment:	-$2,000 (outflow)
Time Period:	20 years
Settings:	
Payment Frequency:	Monthly
Payment made at:	End of Period
Compounding Frequency:	Monthly

Answer:	Future Value: $1,978,510.73

Example # 3: Nominal Interest Rate Calculation

A lender has loaned $120,000 and will receive back $1,200 at the end of each month for 5 years plus $90,000 at the end of the fifth year.
What is the Annual Return, compounded monthly?

Calculate:	Nominal Annual Interest Rate
Present Value:	-$120,000 (outflow)
Future Value:	$90,000 (inflow)
Payment:	$1,200 (inflow)
Time Period:	5 years
Settings:	
Payment Frequency:	Monthly
Payment made at:	End of Period
Compounding Frequency:	Monthly

Answer:	Nominal Annual Interest Rate: 7.907%

Example # 4: Time Period Calculations

If you invest $300,000 at 9.5% compounded monthly plus $2,000 per month at the beginning of each month, how long will it take for the investment to grow to $700,000?

Calculate:	Time Period
Nominal Annual Interest Rate:	9.5%
Present Value:	-$300,000 (outflow)
Future Value:	$700,000 (inflow)
Payment:	-$2,000 (outflow)
Settings:	
Payment Frequency:	Monthly
Payment made at:	Beginning of Period
Compounding Frequency:	Monthly

Answer:	Time Period: 68.86 months

Example # 5: Payment Calculation

An owner of an apartment building feels that he will have to replace all of the appliances in 6 years time at an estimated cost $39,000. At a Nominal Annual Interest Rate of 4.5%, compounded monthly, how much money will he have to deposit at the beginning of each month in order to have $39,000 available at the end of 6 years?

Calculate:	Payment
Nominal Annual Interest Rate:	4.5%
Present Value:	$0.00
Future Value:	$39,000
Time Period:	6 years
Settings:	
Payment Frequency:	Monthly
Payment made at:	Beginning of Period
Compounding Frequency:	Monthly

Answer:	Payment: $471.07 per month

Notes:

1. **Mortgage Schedules**.
   You can use Time Value of Money Calculator to solve mortgage problems, but you may find it easier to use the Standard Mortgage function in Calculator (see below) where you can print out the mortgage schedules.,

2. **Handling uneven cash flows**
   If you are dealing with uneven cash flows, use the Discounted Cash Flow Calculator (see below). The Time Value of Money Calculator can only handle uniform payments. Following is an example of an "Uneven Cash Flow"

<div align="center">

Uneven Cash Flow Example

Year	
0	-$350,000
1	$40,000
2	$43,000
3	$49,000
4	$54,000
5	$425,000

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Time Value of Money Calculator cannot solve this because the periodic payments yearly are uneven. Use the Discounted Cash Flow Calculator.

Compounding Annual Growth Calculator

Is used to carryout compounding annual growth calculations.

Example: "An Investor has purchased a property for $600,000, what will it be worth in 15 years time if she thinks the value will increase at 4% per year compounded?"
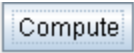
Important Note: The Purchase Price of $600,000, which is the Present Value, is entered as a negative value because it is an Outflow or payment i.e. the investor is spending $600,000 which is treated as a negative number. When they sell the property in 15 year time, they receive the money from the sale which is a positive number.

Compounding Annual Growth

Calculate
- ○ Present Value (PV)
- ● Future Value (FV)
- ○ Annual Compounding Rate

Entries

Annual Compounding Rate	4.000%
Present Value	-$ 600,000.00
Future Value	$ 1,080,566.10
No of Years	15

Enter the above data as show in the picture above and then press the [Compute] button.

The program can calculate: Future Value, Present Value, or Annual Compound Growth Rate.

Answers: $1,080,566

Discounted Cash Flow Calculator

Is used to calculate the Internal Rate of Return (IRR), the Net Present Value (NPV), and the Modified Rate of Return (MIRR) for a series of cash flows.

Example: An investor is considering purchasing a rental property for $900,000, and expects the annual cash flows listed below. In addition, he anticipates that the building will sell for $1,500,000 at the end of the 5th year. What is the:

- ♦ Internal Rate of Return (IRR)?
- ♦ Net Present Value using a 9% Discount Rate?
- ♦ Modified Internal Rate of Return (MIRR) using a short term borrowing rate of 8% and a short term reinvestment rate of 3.5%?

 Note: The investment of $900,000 is entered as a negative number because it is an outflow or payment.
 The cash flow in year 5 is comprised of the operating cash flow plus revenue from the sale less real estate fees and closing costs which comes to $1,237,000.

Entries		Period	Cash Flow
Number of Periods	5	0	-$ 900,000
		1	$ 70,000
Investor's Discount Rate	9.000%	2	$ 76,000
Short Term Financing Rate	8.000%	3	$ 78,000
Short Term Reinvestment Rate	3.500%	4	$ 81,000
		5	$ 1,237,000

Results

Net Present Value (NPV)	$ 149,765.74
Internal Rate of Return (IRR)	12.902%
Modified Internal Rate of Return (MIRR)	11.757%

Fill Down   Fill Up

Enter the above data as show in the picture above and then press the Compute button.

 Note: For more complex analysis involving both before and after tax cash flows, use the Investor program.

Standard Mortgage Calculator

Is used to produce the mortgage schedules for a standard, or conventional mortgage, where the interest rate is fixed for the entire term, and the blended payment of principal and interest is constant. The following results are produced on the screen:

- Principal and Interest components of each payment
- Outstanding balance at the end of the term
- Principal paid-off over the term
- Interest paid over the term
- Effective Annual Interest Rate

Note: For more complex mortgages with multiple terms, fixed or variable interest rates, and additional payments or borrowing, use the Investor Financier Template.

Example: Calculate the payment, Outstanding Balance at the end of the term, and the Effective Interest Rate for the following mortgage:

Mortgage Amount:	$176,000
Nominal Annual Interest Rate:	7.500%
Amortization Period:	30 years
Term:	3 years Mortgage is paid off at the end of 3 years
Payment Frequency:	Monthly
Payment Made:	End of Period
Compounding Frequency:	Semi-annually

Standard Mortgage

Mortgage Details

Mortgage Amount → $ 175,000.00

Nominal Annual Interest Rate → 7.500%

Amortization Period

→ 30 Years
0 Months
0.00 Weeks

Term

→ 3 Years
0 Months
0.00 Weeks

Mortgage Settings

Payment Frequency: Monthly

Payment made at: End of Period

Payment Rounding: Up to nearest Cent

Compounding Frequency: Semi-annually

Period	Monthly Payments ($)	Interest ($)	Principal ($)	Outstanding Balance ($)
1	$ 1,209.93	$ 1,077.05	$ 132.88	$ 174,867.12
2	$ 1,209.93	$ 1,076.23	$ 133.70	$ 174,733.42
3	$ 1,209.93	$ 1,075.41	$ 134.52	$ 174,598.90
4	$ 1,209.93	$ 1,074.58	$ 135.35	$ 174,463.55
5	$ 1,209.93	$ 1,073.75	$ 136.18	$ 174,327.37
6	$ 1,209.93	$ 1,072.91	$ 137.02	$ 174,190.35
7	$ 1,209.93	$ 1,072.06	$ 137.87	$ 174,052.48
8	$ 1,209.93	$ 1,071.22	$ 138.71	$ 173,913.77
9	$ 1,209.93	$ 1,070.36	$ 139.57	$ 173,774.20
10	$ 1,209.93	$ 1,069.50	$ 140.43	$ 173,633.77
11	$ 1,209.93	$ 1,068.64	$ 141.29	$ 173,492.48
12	$ 1,209.93	$ 1,067.77	$ 142.16	$ 173,350.32

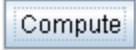|	Payments	Interest	Principal
Total	$ 43,557.48	$ 38,220.62	$ 5,336.86

Effective Annual Interest Rate: 7.641%

Enter the above data as show in the picture above and then press the Compute button.

APR/Effective Interest Rate Calculator

Is used to calculate the APR (Annual Percentage Rate) and the Effective Annual Interest Rate. It can be used to compare several different loan proposals by standardizing their Interest Rates.

This allows you to compare mortgages using the **"Effective True Annual Interest Rate"** and choose the best mortgage which is the one with the lowest "Effective True Annual Interest Rate"

Example: A purchaser of a home has been offered the following mortgage. Calculate the:
- Amount advanced to the Borrower
- APR based on Amortization Period
- APR based on Term
- Effective Annual Interest Rate
- Effective True Annual Interest Rate
- Outstanding Balance at the End of Term
- Monthly Payments

Face Value of Loan:	$325,000
Nominal Annual Interest Rate:	7.500%
Amortization Period:	30 years
Term:	5 year. Mortgage is repaid at end of 5 years
Compounding Frequency:	Semi-annually
Loan Fees and Costs	
Discount Point:	1.50%
Origination Fee:	$800
Appraisal Fee	$180
Documentation Preparations:	$250
Other Closing Costs:	$0

APR/Effective Interest Rate

Mortgage Details

Face Value Of Loan	→ $ 325,000.00
Nominal Annual Interest Rate	→ 7.500%

Amortization Period

→ 30	Years
0	Months
0.00	Weeks

Term

→ 5	Years
0	Months
0.00	Weeks

Mortgage Settings

Payment Frequency	Monthly
Payment made at	End of Period
Payment Rounding	Up to nearest Cent
Compounding Frequency	Semi-annually

Loan Fees and Costs

Description	Entry Choice	Amount
Discount Points	%	→ 1.50%
Origination Fee	Amount	→ $ 800.00
Appraisal Fee	Amount	→ $ 180.00
Documentation Preparatio...	Amount	→ $ 250.00
Other Closing Costs	Amount	→ $ 0.00

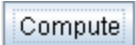|	
Amount Advanced to Borrower	$ 318,895.00
APR based on Amortization Period	7.579%
APR based on Term	7.852%
Effective Annual Interest Rate	7.641%
Effective True Annual Interest Rate	→ 8.141%
Outstanding Balance at End of Term	$ 307,154.22
Monthly Payments	$ 2,247.01

Enter the above data as show in the picture above and then press the | Compute | button.

Mortgage Discount Calculator

Is used to determine how much to pay for a mortgage in order to obtain a specified annual return.

Example: An investor is considering buying the following mortgage.

Nominal Annual Interest Rate	8%
Monthly Payment	$3,816
Remaining Term	3 Years
Balance at the End of Term	$460,679

How much should she pay for the mortgage to achieve a return of 11% per year, compounded semi-annually?

Entries;

Mortgage Discount

Details of Mortgage being Purchased

Monthly Payments	➡ $ 3,816.00	
Outstanding Balance at End of Term	➡ $ 460,679.00	

Remaining Term

Years	Months	Weeks
➡ 3	0	0.00

Mortgage Settings

Payment Frequency	Monthly ▼
Payment made at	End of Period ▼
Compounding Frequency	Semi-annually ▼

Optional Entries for Report Only

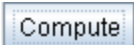|	
Current Outstanding Mortgage Balance	$ 0.00
Nominal Annual Interest Rate	0.000%

Desired Nominal Annual Interest Rate   11.000%

Value of Buyer of the Mortgage $ 451,077.06 ⬅ **Answer**

Enter the above data as show in the picture above and then press the | Compute | button

Answer;

To achieve a 11% Nominal Annual Interest Rate, the buyer would pay $ 451,077 for the mortgage.

Seller Take-Back Mortgage (Cost or Benefit)

Often, the seller of a property provides a mortgage called a "Seller or Vendor Take Back Mortgage" to the buyer of the property. The Interest Rate for the Take Back Mortgage may be different from the current market rate for a similar mortgage. As an example, the Interest Rate for the Take-Back Mortgage is 6.5% and the market rate for a similar mortgage is 7.25%.

This function calculates the Cost or Benefit of the Seller Take Back Mortgage to the buyer of property.

Example: A purchaser of an Income Property has been offered a vendor's first mortgage which has an interest rate of 7.50%, while the market interest rate for a comparable mortgage is 10.00%. The purchaser would like to know the benefit of the vendor's mortgage.

Mortgage Amount:	$1,000,000
Contract Nominal Annual Interest Rate:	7.500%
Amortization Period:	15 years
Term:	15 years
Current Market Interest Rate:	10.000%

Enter the above data as show in the picture above and then press the Compute button.

Answer;

The benefit of the Seller's Mortgage at a Nominal Annual Interest Rate of 7.5% when the current market rate for a comparable mortgage is 10% is $ 133,446.

Mortgage Take Over (Cost/Benefit)

This function is used to calculate the Cost or Benefit to the purchaser of a property in assuming the Seller's mortgage at an Interest Rate that is either higher, or lower than the current interest rate for a similar mortgage.

Example: What is the cost or benefit to the purchaser for assuming the following mortgage?

Monthly Payment	$1,144.83
Current Outstanding Balance	$144,872.84
Remaining Term	3 Years & 7 Months
Outstanding Balance at the End of Term	$138,203.25
Nominal Annual Interest Rate	8%
Current Interest Rate	6.25%

Mortgage Take Over (Cost/Benefit)

Details of the Mortgage being Assumed

Monthly Payments	➡ $ 1,144.83
Current Outstanding Balance	➡ $ 144,872.84
Oustanding Balance at End of Term	➡ $ 138,203.25

Remaining Term

Years	Months	Weeks
➡ 3	➡ 7	0.00

Mortgage Settings

Payment Frequency	Monthly
Payment made at	End of Period
Compounding Frequency	Semi-annually

Optional Entry for Report Only

Nominal Annual Interest Rate	➡ 8.000%

Current Market Interest Rate   ➡ 6.250%

The Cost of assuming the Seller's mortgage is $ 10,043.44 ⬅ Answer

Compute

Enter the above data as show in the picture above and then press the button.

Answer;

> The Cost of assuming the Seller's mortgage at a Nominal Annual Interest of 8% when the current market rate for a comparable mortgage is 6.25% is $ 10,044.

Mortgage Renegotiation (Cost/Benefit)

This function is used to evaluate the cost or benefit associated with renegotiating your mortgage if interest rates fall.

Example: What is the cost or benefit of renegotiating the following mortgage if the interest rate can be reduce from 9.5% to 6.5% by paying a 3 months interest penalty plus legal and other fees of $ 1,600?

Mortgage Amount	$350,000
Nominal Annual Interest Rate	9.5%
Amortization Period	30 Years
Time Period since Mortgage Commenced	1 Year & 3 Months
Term	5 Years
Mortgage Settings:	
Payment Frequency:	Monthly
Payment made at:	End of Period
Payment Rounding	Up to the nearest Cent
Compounding Frequency	Monthly
New Mortgage Details:	
Nominal Annual Interest Rate:	6.5%
Refinancing Costs:	$1,600
Interest Penalty:	3 Months

Entries and results are shown on the next page

Mortgage Renegotiation (Cost/Benefit)

Present Mortgage Details

Mortgage Amount	$ 350,000.00
Nominal Annual Interest Rate	9.500%

Amortization Period

Years	Months	Weeks
30	0	0.00

Time Period since Mortgage Commenced

Years	Months	Weeks
1	3	0.00

Remaining Term

Years	Months	Weeks
5	0	0.00

Mortgage Settings

Payment Frequency	Monthly
Payment made at	End of Period
Payment Rounding	Up to nearest Cent
Compounding Frequency	Semi-annually

New Mortgage Details

Nominal Annual Interest Rate	6.500%
Refinancing Cost (Legal and appraisal fees etc.)	$ 1,600.00
Interest Penalty (Month)	3

Refinancing Costs

Refinancing Costs	$ 1,600.00
Interest Penalty	$ 8,086.58
Total	$ 9,686.58

Present Mortgage

Current Outstanding Balance	$ 347,165.53
Outstanding Balance at End of Term	$ 336,393.22
Monthly Payment	$ 2,896.44

New Mortgage

Mortgage Amount	$ 347,165.53
Outstanding Balance at End of Term	$ 329,376.23
Monthly Payment	$ 2,206.24

Enter the above data as show in the picture above and then press the [Compute] button.

Answer;

> The present value of the money saved by accepting the new mortgage is $ 23,374.97 when discounted at 6.5%.
>
> Consider accepting the new mortgage.

If the answer was negative consider rejecting the new mortgage

When deciding whether to renegotiate a mortgage to lower the interest cost you need to establish the total costs and fees that the lender will charge for redoing the mortgage.

The lender will calculate the interest Rate Differential Cost between the contract interest rate and the proposed interest rate which will be paid by the borrower if the loan is renegotiable. In addition there may be other fees and costs charged.

Home Financing Calculator

Is used to calculate the loan amount and mortgage payment using the family income and expenses, as well as the:

- Loan to Value Ratio
- Gross Debt Service Ratio
- Total Gross Debt Service Ratio

Example: A family would like to know how much they can borrow for a first mortgage on a home they are planning to purchase. The appraised value of the home is $435,000.

Home Financing

Family Income and Expenses

Monthly Income

Income Description	Amount
Combined Monthly Income	➡ $ 8,000
Other Monthly Income	➡ $ 200

Gross Monthly Income — $ 8,200

Housing Expenses

Description	Entry	Amount
Property Taxes	Annual ▾	➡ $ 1,700
Insurance	Annual ▾	➡ $ 800
Condominium Association dues	Monthly ▾	$ 0
Other Housing Expenses	Monthly ▾	$ 0

Total Monthly Housing Expenses — $ 208

Other Monthly Expenses

Expense Description	Amount
Car Loan or Lease Payments	➡ $ 450
Credit Card Payments	➡ $ 100
Bank Loan Payments	$ 0
Alimony/Child Support Payments	$ 0
Other Monthly Payments	$ 0

Total Monthly Expenses — $ 758

Net Monthly Income — $ 7,442

Mortgage Details

Nominal Annual Interest Rate — ➡ 7.500%

Amortization Period

Years	Months	Weeks
➡ 30	0	0.00

Mortgage Settings

Payment Frequency	Monthly ▾
Payment made at	End of Period ▾
Payment Rounding	Up to nearest Cent ▾
Compounding Frequency	Monthly ▾

Lending Criteria

Appraised Value (for lending purposes)	➡ $ 435,000
Loan/Value Ratio	➡ 75.00%
Front End Ratio (Housing Ratio)	➡ 30.00%
Back End Ratio (Total Debt Ratio)	➡ 38.00%

Enter the above data as show in the picture above and then press the **Compute** button.

Answer;

Loan amount based on a Loan/Value Ratio of 75% is $ 326,250 with monthly payments of $ 2,281.19 with an equity requirement of $ 108,750 (25%).

Loan amount based on a Front End Ratio (Housing Ratio) of 30% is $ 322,076 with monthly payments of $ 2,252 with an equity requirement of $ 112,924 (26%).

Loan amount based on a Back End Ratio (Total Debt Ratio) of 38% is $ 337,236 with monthly payments of $ 2,358 with an equity requirement of $ 97,764 (22%).

Conclusion:
Based on the lending criteria entered, the loan amount based on a Front End Ratio (Housing Ratio) of 30% is $ 322,076, with monthly payments of $ 2,252 with an equity requirement of $ 112,924 (26%).

Note: There are a variety of ways to calculate the Gross Debt Service Ratio.

The program uses the following formula:

$$\text{Housing Ratio} = \frac{\text{(Principal + Interest + Taxes)}}{\text{Gross Monthly Income}}$$

Some lenders modify the formula by adding all of, or a portion of:
- Maintenance or Strata Fees.
- Heating Costs etc.

Income Property Financing Calculator

Example: Calculate the loan amount for a rental apartment building based on the following information:

Potential Gross Income:	$950,000
Vacancy & Bad Debt Allowance:	3.50%
Operating Expenses:	20.00% of Effective Gross Income
Property Management:	5.00% of Effective Gross Income

Market Value:	Based on a 9.50% Cap Rate

Mortgage Details
Nominal Annual Interest Rate:	7.500%
Amortization:	15 Years
Compounding Frequency	Semi-Annually

Lending Ratios
Loan/Value Ratio:	75.00%
Debt Service Ratio:	1.20

Income Property Financing

Income and Bad Debt Allowance

Annual Potential Gross Income	$ 950,000
Less: Vacancy and Bad Dept Allowance	3.50%
Effective Gross Income	$ 916,750

Operating Expenses

Annual Operation Expenses		
% of Effective Gros...		20.00%
Property Managment		
% of Effective Gros...		5.00%
Total Operation Expenses	$ 229,188	
Net Operating Income	$ 687,562	

Market Value Entry Option	
Cap Rate	9.50%
Appraised Value	$ 7,237,495

Mortgage Details

Nominal Annual Interest Rate	7.500%

Amortization Period
Years	Months	Weeks
15	0	0.00

Mortgage Settings

Payment Frequency	Monthly
Payment made at	End of Period
Payment Rounding	Up to nearest Cent
Compounding Frequency	Semi-annually
Loan/Value Ratio	75.00%
Debt Service Ratio	1.20

Based on Loan Value Ratio

Payment	$ 49,966.60
Loan Amount	$ 5,428,121.00

Based on Debt Service Ratio

Payment	$ 47,747.37
Loan Amount	$ 5,187,034.47

Enter the above data as show in the picture above and then press the Compute button.

Answer;

The loan amount is $ 5,428,121 based on a Loan to Value Ratio of 75% with monthly payments of $ 49,966.6 with an equity requirement of $ 1,809,374 (25%) based on capitalized value.

The loan amount is $ 5,187,034 based on a Debt Service Ratio of 1.2 with monthly payments of $ 47,747.37 with an equity requirement of $ 2,050,461 (28%) based on capitalized value.

Conclusion:
Based on the entered lending criteria, the loan amount is $ 5,187,034 based on a Debt Service Ratio of 1.2 with monthly payments of $ 47,747.37 with an equity requirement of $ 2,050,461 (28%) based on capitalized value.

Mortgage Rate Buy Down Calculator

In marketing new developments, such as a condominium project, the developer may offer the purchaser a first mortgage with an Interest Rate that is less than the current Market Interest Rate. He does this by buying down the interest rate from the lender.

This function calculates the Buy Down Mortgage Contract between the Lender and the Developer.

Example: A condominium developer wishes to offer a mortgage to the buyers of the units with an interest rate lower than the market interest rate. He does this in an attempt to make the project more marketable. Calculate the mortgage contract between the Lender and the Developer.

The financial information is:

Mortgage Rate Buy Down

Mortgage Details

Loan Amount	$ 140,000.00
Nomina Annual Interest Rate	7.500%
Amortization (in Years)	15
Term (in Years)	5

Mortgage Settings

Payment Frequency	Monthly
Payment made at	End of Period
Compounding Frequency	Semi-annually

Buy Down Details

Number of Buy Down Stages	3

Stage	Interest Rate Reduction (%)	Number of Years	Periodic Payment
1	3.00%	1	$ 1,068.02
2	2.00%	1	$ 1,139.32
3	1.00%	1	$ 1,212.92
	0.00%	2	$ 1,288.72

Terms (in years)	5
Buy Down Fee paid by	Seller

Buy Down Fee	$ 4,900.74	Conventional Monthly Payment	$ 1,288.72
Effective Annual Interest Rate for Borrower	6.663%	Outstanding Balance at End of Term	$ 109,116.65

Enter the above data as show in the picture above and then press the **Compute** button.

Answer

Mortgage Details
    Loan Amount: $ 140,000.00
    Nominal Annual Interest Rate: 7.500%
    Amortization Period: 15   Years
    Term: 5   Years

Mortgage Settings
    Payment Frequency: Monthly
    Payment: End of Period
    Compounding Frequency: Semi-annually

Interest Rate Buy Down Details

Stage	Interest Rate Reduction	No of Years	Periodic Payment
1	3.000%	1	$ 1,068.02
2	2.000%	1	$ 1,139.32
3	1.000%	1	$ 1,212.92
	0%	2	$ 1,288.72

Buy Down Fee is paid by: Seller
Buy Down Fee: $ 4,900.74
Effective Annual Interest Rate for Borrower: 6.663%
Conventional Monthly Payment: $ 1,288.72
Outstanding Balance at End of Term: $ 109,116.65

Residential Building. Breakeven Analysis

This function is used to calculate the number of suites that must be rented in order for an apartment building to breakeven, which occurs when the income exactly covers the operating expenses and mortgage payments.

Example: An investor is considering purchasing a 45 suite rental apartment building and wants to know how many suites must be rented in order to breakeven.

Number of Suites	45
Income Per Suite Per Month	$680
Annual Fixed Operating Expenses	$78,000
Annual Variable Cost Per Suite	$480
Annual Debt Service (Mortgage Payments)	$198,000

Number of Suites	➔ 45
Average Income per Suite per Month (including parking)	➔ $ 680.00
Annual Fixed Operating Expenses	➔ $ 78,000
Annual Variable Operating Cost per Suite	➔ $ 480
Annual Debt Service	➔ $ 198,000

Enter the above data as show in the picture above and then press the Compute button.

Answer;

This building will breakeven when 36 (80%) of the suites are rented.

Commercial Building. Breakeven Analysis

This function is used to calculate the amount of space (in square feet) that must to be rented in order for the building to breakeven, which occurs when the income exactly covers the operating expenses and mortgage payments.

Example: An investor is considering purchasing a 75,800 square foot office building and wants to know how many square feet must be rented in order to breakeven.

Rentable Area	75,800 Sq Feet
Average Income Per Sq Feet Per Year	$23.50
Annual Fixed Operating Expenses	$76,000
Annual Variable Cost Per Sq Foot	$1.25
Annual Debt Service (Mortgage Payments)	$958,000

Rented Area (Sq Feet)	➤75,800
Average Income/Sq Ft/Year (including parking)	➤ $ 23.50
Annual Fixed Operating Expenses	➤ $ 76,000
Annual Variable Operating Cost per Sq Foot	➤ $ 1.25
Annual Debt Service	➤ $ 958,000

Enter the above data as show in the picture above and then press the [Compute] button.

Answer

This building will breakeven when 46,472 (61.31%) square feet is rented.

Imperial/Metric Converter

Is used to convert between the Imperial and Metric systems for the following types of measures:

- Length
- $ per area
- Area
- $ per cubic measure
- Volume (cubic measure)

Example: Convert $21.00 per Sq. Ft to $ per Sq. Meter
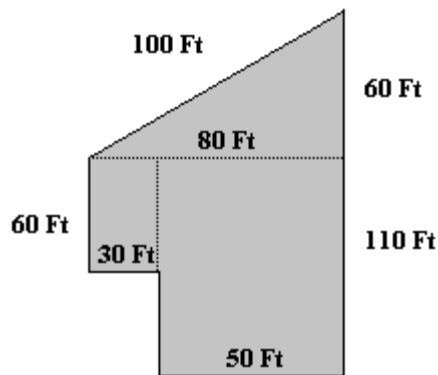
Area Calculator

Is used to calculate the area of lots, floor plans etc. consisting of one or more shapes.
The Shape options are:

- Square
- Rectangle
- Triangle
- Circle
- Circle Segment

- Semicircle
- ¼ Circle
- ¾ Circle
- Circle Sector

You can calculate areas by adding or subtracting the shapes as necessary.

Example: Calculate the area of this building

To calculate the area, carry out the following steps:

1. Select measurement type E.g., Feet, by pointing and clicking on the "Measurement in "Choice Button to display the measurement options, and then click on the desired option.
2. In the first row click on the Shape Choice Button to display the Shape Options and select the Triangle.
3. Enter the dimensions of the Triangle. i.e., 100 feet, 60 feet, 80 feet.
4. Click on the Add Button to add a new Row.
   a. Select the Rectangle Option in the Shape Box for the row.
   b. Enter the dimensions of the Rectangle i.e., 50 feet x 110 feet
5. Click on the Add Button to add a new Row.
   a. Click on the Action Box in the Row to display the Actions and select Add.
   b. Select the Rectangle Option in the Shape Box for the row.
   c. Enter the dimensions of the Rectangle i.e., 30 feet x 60 feet
6. Click on the Compute Button to calculate the total area.

Area Calculator
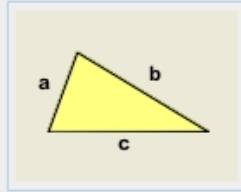
Measurement in **Feet**

Action	Shape	Side a	Side b	Side c	Area
add	Triangle	60.00	100.00	80.00	2,400.00
add	Rectangle	50.00	110.00		5,500.00
add	Rectangle	30.00	60.00		1,800.00

Total Area in Feet   9,700.00

Answer: Area 9,700 sq. ft.