

# Real Estate Calculations for Sophisticated Real Estate Investors

## Version 2.0

### Real Estate Calculations For Sophisticated Investors



What Every Real Estate  
Investor Needs To Know About  
Financial Calculations

### Part 2

Multi-Part Program

### Real Estate Calculations

- Foundation
- Quick Review
- Next Calculations
- Why Important and How to use



### Real Estate Calculations

- Simple Interest
- Compound Interest
  - Present Value
  - Future Value
  - Calculation Growth %
  - Calculating Number of Periods



### Real Estate Calculations

- Gross Operating Income
- Net Operating Income
- Capitalization Rate
- Net Income Multiplier



### Real Estate Calculations

- Numbers Game
- Crunching the numbers-  
Easier than you think
- Keep it Simple (K.I.S.)



# Real Estate Calculations for Sophisticated Real Estate Investors

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### Real Estate Calculations

- Increases your chance of success
- Eliminates the Emotions
- Sophisticated Investor
- Increases Financial Literacy



	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7			<b>Real Estate Investment Network</b>		
8			<i>Financial Calculations for Sophisticated Real Estate Investors</i>		
9					
10	<u><b>Yield</b></u>				
11					
12	Monthly Rent	\$1,495.00	Input number		
13	Annual Rent	\$17,940.00	=B12*12		
14					
15	Purchase Price	\$260,000.00	Input number		
16	Yield	6.9%	=B13/B15		
17					
18					
19		© 2008, Real Estate Investment Network. All Rights Reserved			

### Real Estate Calculations

- Quick Review
  - Yield (Gross Rent Multiplier)
  - Future Value
  - Interest Payments- LOC
  - Net Sale Proceeds
  - Simple ROI Calculation



### The Calculations



#### Simple Interest

### Real Estate Calculations

- Simple Interest
  - Computing interest to a 'principal'
  - Apply interest rate only to original principal amount
  - Calculating a payment on a simple 'VTB'



### Real Estate Calculations

Interest = principal x Rate x Time  
Amount = principal x [1 + (Rate x Time)]

**Interest** - Total amount of interest earned  
**Principal** - Total amount of investment  
**Rate** - Interest rate %  
**Time** - length of hold period



# Real Estate Calculations for Sophisticated Real Estate Investors

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### Real Estate Calculations

Interest = principal x Rate x Time

Amount = principal x [1 + (Rate x Time)]

For example:

- VTB \$ 60,000
- Rate 10% / year
- Time 30 months



### Simple Interest

Principal	\$60,000.00
Rate	10.00%
Time	2.50

Calculate Time (years)

Months	30.00
Calculate Years	2.50

Amount of Interest \$15,000.00

### The Calculations



### Compound Interest

“The most powerful force in the universe is compound interest”.

~Albert Einstein

### Real Estate Calculations

- Measuring how the value of your investment is increasing (or decreasing) over time
- Apply interest rate to the original principal plus all accumulated interest



### Real Estate Calculations

Future Value = principal X (1 + periodic rate)<sup>Number of Periods</sup>

	Investment	\$10,000	
	Annual interest rate	7%	
Year	Starting Balance	Interest	Ending Balance
1	\$10,000.00	\$700.00	\$10,700.00
2	\$10,700.00	\$749.00	\$11,449.00
3	\$11,449.00	\$801.43	\$12,250.43
4	\$12,250.43	\$857.53	\$13,107.96
5	\$13,107.96	\$917.56	\$14,025.52



# Real Estate Calculations for Sophisticated Real Estate Investors

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### Real Estate Calculations

- Four Variables
  - Present Value (PV) - initial investment
  - Periodic Interest rate (%i)
  - Time (N) - compounding periods
  - Future Value (FV)



### Real Estate Calculations

- If you know any of the three variables you can solve for the fourth
- For Example...



### Real Estate Calculations

- \$100,000 property
- 8% growth/ year
- After 7 years will be worth?

~ Calculating Future Value

PV	%d (per period)	N	FV
\$100,000.00	8.00%	7	\$171,382.43



### Real Estate Calculations

- Sell property in 10 years for \$200,000
- 5% growth/ year
- What is the purchase price today (PV)?

~ Calculating Present Value

PV	%d (per period)	N	FV
\$122,782.65	5.00%	10	\$200,000.00



### Real Estate Calculations

- Paid \$80,000 in 2002
- Sold in 2008 (6 years) for \$160,000
- What is the Growth rate per year?

~ Calculate Periodic Rate

PV	%d (per period)	N	FV
\$80,000.00	12.25%	6	\$160,000.00



### Real Estate Calculations

- Investor invests \$100,000
- 10% compounded interest per year
- How long to double their money?

~ Calculate Number of Periods

PV	%d (per period)	N	FV
\$100,000.00	10.00%	7.27	\$200,000.00



# Real Estate Calculations for Sophisticated Real Estate Investors

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### The Calculations

#### Gross Operating Income

#### Real Estate Calculations

- Analyzing properties income start from the top down
- Scheduled income less vacancy and credit loss
- Not potential income, but rather actual you expect to collect

#### Real Estate Calculations

Gross Scheduled Income  
<Less> Vacancy and Credit Loss  
= Gross Operating income

#### Real Estate Calculations

- Vacancy rates?
  - CMHC
  - Your own portfolio
  - Other investors
  - Apt. rental associations

#### Real Estate Calculations

- Google Search
- Bank (what rate do they use?)
- Monitoring classified ads (directional)

#### Gross & Net Operating Income

Projected Gross Rent Income	\$18,000.00
Vacancy and Credit Allowance	5.0% \$900.00
Gross Operating Income	\$17,100.00

# Real Estate Calculations for Sophisticated Real Estate Investors

## Version 2.0

### The Calculations

#### Net Operating Income

#### Real Estate Calculations

- Properties income after being reduced by vacancy and operating expenses
- Profitability before considering taxes and financing
- Important calculation

#### Real Estate Calculations

- Return on your money if purchased for all cash
- What is an Operating expense?
- “Necessary for the maintenance of a property to ensure its ability to produce income”

#### Real Estate Calculations

Gross Scheduled Income  
<Less> Vacancy and Credit Loss  
= Gross Operating Income

<Less> Operating Expense  
= Net Operating Income

#### Gross & Net Operating Income

Projected Gross Rent Income	\$18,000.00
Vacancy and Credit Allowance	5.0%
	\$900.00
Gross Operating Income	<u>\$17,100.00</u>
Expenses	
Accounting	\$50.00
Advertising	\$27.00
Heat	\$0.00
Electricity	\$0.00
Water/Sewer	\$0.00
Taxes	\$936.00
Condo Fee	\$1,500.00
Insurance	\$180.00
Property Management	\$1,440.00
Resident Manager	\$0.00
Repairs and Maintenance	\$1,080.00
Cleaning	\$0.00
Admin	\$0.00
<additional #1>	\$0.00
<additional #1>	\$0.00
Misc.	\$0.00
Total Expenses	\$5,213.00
Net Operating Income	<u>\$12,787.00</u>

### The Calculations

#### Capitalization Rate

# Real Estate Calculations for Sophisticated Real Estate Investors

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### Real Estate Calculations

- A rate used to convert income into value.
- Relationship between properties value and its net operating income
- Indirect measure of how fast an investment will pay for itself in net operating income



### Real Estate Calculations

- Primarily in Multi-family purchases
- 3 types of applications- potential property purchase



### Real Estate Calculations

- Is the Cap rate in line with similar properties?
- Calculate a 'reasonable' value
- Calculate the Net Operating income



### Real Estate Calculations

$$\text{Cap Rate} = \text{NOI} / \text{Value}$$

$$\text{Value} = \text{NOI} / \text{Cap Rate}$$

$$\text{NOI} = \text{Value} \times \text{Cap Rate}$$



#### *~ Calculating Capitalization Rate*

Net Operating Income	\$12,787.00
Value	\$165,000.00
Cap Rate	7.75%

Compare to similar properties in the area... is it in line?



#### *~ Calculating Value*

Net Operating Income	\$12,787.00
Value	\$182,671.43
Cap Rate	7.00%

Calculate a reasonable estimate of value... what is the property worth based upon the NOI?



# Real Estate Calculations for Sophisticated Real Estate Investors

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~ *Calculating Net Operating Income*

Net Operating Income	\$13,932.00
Value	\$172,000.00
Cap Rate	8.10%

What NOI should you expect if you know Seller price and Cap rate?



### Real Estate Calculations

- Where do you find Cap Rates?
  - Appraisers
  - Banks
  - Brokers
  - Only Multi-Family specialists
  - ‘He who has the gold makes the rules’



### Real Estate Calculations

- Keys- When buying and analyzing
  - Do your own number crunching
  - Use actual current year income
  - Use actual current year expenses
  - Use banks Cap Rate
  - Send your numbers to your Broker



### The Calculations

#### Net Income Multiplier



### Real Estate Calculations

- Factor used to estimate the market value of income producing properties
- Reciprocal of Cap Rate
- Amount a typical investor would pay for each dollar of NOI



### Real Estate Calculations

- Very quick calculation
- Quick reading as to property value
- 3 steps
  - Establish area Cap Rate
  - Find reciprocal of that rate (1/cap rate)
  - Multiply by NOI



# Real Estate Calculations for Sophisticated Real Estate Investors

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### Real Estate Calculations

Net Income Multiplier = 1 / Cap Rate

NIM \* NOI = Estimate Value



### Real Estate Calculations

#### Net Income Multiplier

Net Operating Income	\$12,787.00
Cap Rate	7.20%
Net Income Multiplier	13.89
Estimate Value of Property	\$177,597.22



### Real Estate Calculations

- Separates you from the Masses
- K.I.S.
- Use numbers to make decisions and actions... but make decisions



### Good Luck



### Implementation & Actions